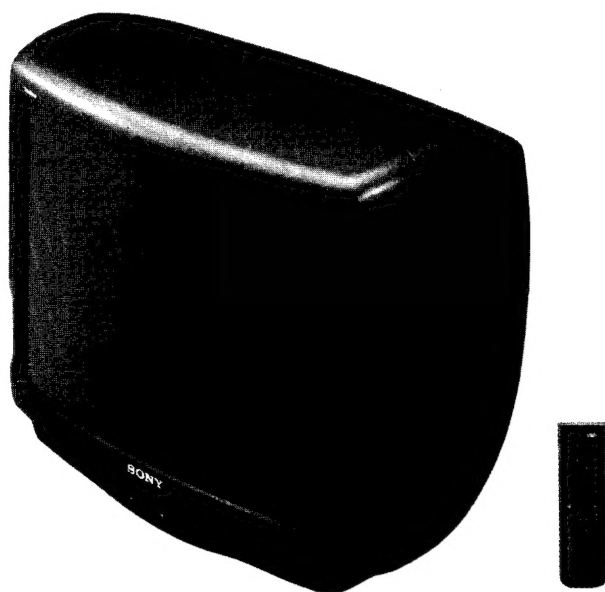


# SERVICE MANUAL

# AE-2 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-B2911A	RM-830	Italian	SCC-F18E-A	KV-B2913E	RM-830	Spanish	SCC-F33E-A
KV-B2911B	RM-830	French	SCC-F32L-A	KV-B2911K	RM-830	OIRT	SCC-F72B-A
KV-B2911D	RM-830	AEP	SCC-F26E-A	KV-B2912U	RM-830	UK	SCC-F25E-A



TRINITRON® COLOR TV  
**SONY®**





ITEM	MODEL	Television system	Stereo system	Channel coverage	Color system
Italian		B/G/H, D/K	GERMAN Stereo	ITALIA VHF:A-H2 (C) UHF:21-69 PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
French		B/G/H, D/K L, I	GERMAN Stereo	L VHF:F02-F10 UHF:F21-F60 CABLE:B-Q B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69 I UHF:B21-B69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
AEP		B/G/H, D/K	GERMAN Stereo	PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
Spanish		B/G/H, D/K	GERMAN/NICAM Stereo	PAL B/G VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
OIRT		B/G/H, D/K	GERMAN Stereo	B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 D/K VHF:R1-R12 UHF:R21-R60	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
UK		I	NICAM Stereo	UHF:B21-B69	PAL SECAM, NTSC 4.43 NTSC 3.58 (VIDEO IN)

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power consumption	110 Wh	114 Wh	110 Wh	112 Wh	107 Wh	164 Wh

Picture tube Hi-Black Trinitron  
Approx. 72 cm  
(Approx. 68 cm picture measured diagonally)  
110°-deflection

#### 【REAR】

- ① 1 21-pin Euro connector  
(CENELEC standard)  
Inputs for audio and video signals
  - inputs for RGB
  - outputs of TV video and audio signals
- ② 2/- 2 21-pin Euro connector
  - inputs for audio and video signals
  - inputs for S video
  - outputs for audio and video signals (selectable)
- ③ Audio inputs (variable) -phono jacks

#### 【FRONT】

- ④ 3 Video input-phono jack
- ⑤ Audio input-phono jacks
- ⑥ 3 S video input 4-pin DIN
- ⑦ Headphone jack : Stereo minijack

Sound output 2×15 (RMS)  
2×30 (Music)  
Power requirement 220-240 V  
Dimensions Approx.751.4 x 577.8 x 529.5 mm  
Weight Approx.47.5 kg  
Supplied accessories RM-830 Remote Commander (1)  
IEC designation R 6 batteries (2)

#### 【RM-830】


Remote control system infrared control  
Power requirements 3 V dc  
2 batteries IEC designation R 6 (size AA)  
Dimensions Approx.65×225×21 mm (w/h/d)  
Weight Approx.157g (Not including Batteries)

Design and specifications are subject to change without notice.



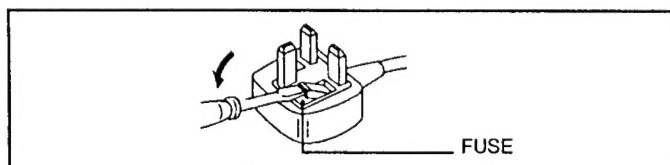
Model name Item	KV-B2911A	KV-B 2911 B	KV-B 2911 D	KV-B 2913 E	KV-B2911K	KV-B 2912 U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PiP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	OFF	OFF	OFF	OFF	OFF
Woofer Box	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Dyn. Convergence	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON
Norm B/G	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	ON
Norm D/K	ON	ON	ON	ON	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Language Preset	Italiano	Francais	Deutsch	None	English	English

## Warning (UK Model only)

The flexible mains lead is supplied connected to a B.S. 1363 fused plug having a fuse of 5 amp capacity. Should the fuse need to be replaced, use 5 AMP FUSE approved by ASTA to BS 1362, ie. carries the  mark.

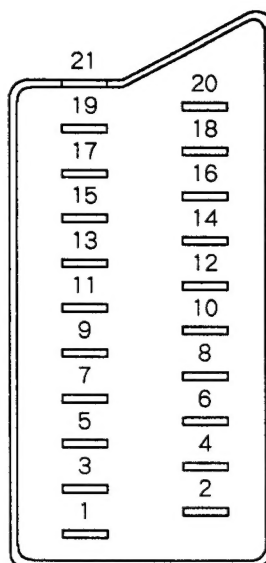
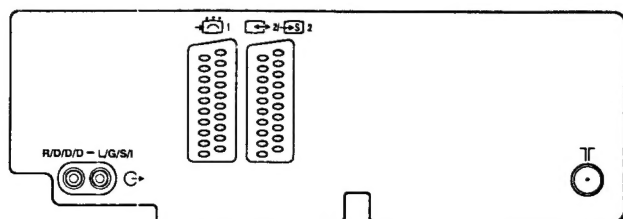
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a 5 AMP FUSE, otherwise the circuit should be protected by a 5 AMP FUSE at the distribution board.





21 pin connector (1 2/3 4)



Pin No	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level : 0.5Vrms Output impedance : Less than 1kohm *
2	○	○	Audio input B (right)	Standard level : 0.5Vrms Input impedance : More than 10kohms *
3	○	○	Audio output A (left)	Standard level : 0.5Vrms Output impedance : Less than 1kohm *
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level : 0.5Vrms Input impedance : More than 10kohms *
7	○	●	Blue input	0.7 ± 3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5 ~ 12V) : Part mode Low state (0 ~ 2V) : TV mode Input impedance : More than 10kohms Input capacitance : Less than 2nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal : 0.7V ± 3dB, 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14	○	○	Ground (blanking)	
15	○	—	Red input	0.7V ± 3dB, 75ohms, positive
	—	○	(S signal) chroma input	0.3V ± 3dB, 75ohms, positive
16	○	●	Blanking input (Ys signal)	High state (1 ~ 3V) Low state (0 ~ 0.4V) Input impedance : 75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V ± 3dB, 75ohms, positive Sync : 0.3V (— 3, + 10dB)
20	○	—	Video input	1V ± 3dB, 75ohms, positive Sync : 0.3V (— 3, + 10dB)
	—	○	Video Input/Y (S signal)	1V ± 3dB, 75ohms, positive Sync : 0.3V (— 3, + 10dB)
21	○	○	Common ground (plug, shield)	

○ Connected ● unconnected (open) \* at 20Hz ~ 20kHz



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**CAUTION**

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.**

**WARNING !!**

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.


**ATTENTION**

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

**ATTENTION!!**

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

**ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!**

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.



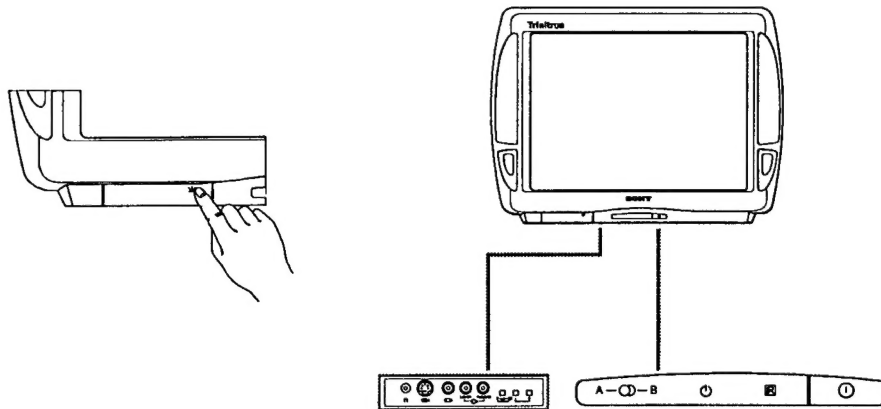
# SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

## 1-1. OVERVIEW

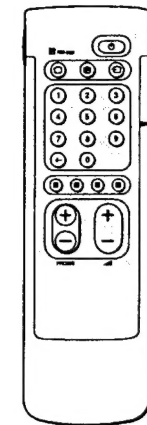
This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

### TV set-front

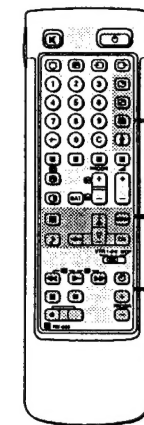


Symbol	Name	Refer to page
⓪	4.6 Main power switch	13
⓪	4.7 Standby indicator	13
A-⓪-B	4.8 Stereo A/B indicators	15
⓪	4.9 Headphones jack	20
⓪ 3, ⓪ 3, ⓪ 3	4.10 Input jacks (S video/video/audio)	20
P-4-⓪	4.11 Function selector (Programme/volume/input)	14
-/+	4.13 Adjustment buttons for function selector	14

### Remote Commander RM-830



B) Simple side



C) Full-Function side

TV/Teletext operation

no function

Menu operation

Video operation

A) Note  
The SAT button does not operate with this TV.

### TV/Teletext operation

Symbol	Name	Refer to page
⓪	Muting on/off button	14
⓪	Standby button	13
⓪	TV power on/TV mode selector button	13
⓪	Teletext button	14
⓪	Input mode selector	14
⓪	Output mode selector	21
1,2,3,4,5,6,7,8,9, and 0	Number buttons	13
-/-	Double-digit entering button	13
C	Direct channel entering button	10
Δ+/-	Volume control button	13
PROGR +/-	Programme selectors	13
⓪	Teletext page access buttons	17
⓪	Picture adjustment button	15
⓪	Sound adjustment button	15
⓪	On-screen display button	14
⓪	Teletext hold button	17
⓪	Time display button	14
⓪	Fastext TOP-text buttons	17

### Menu operation

Symbol	Name	Refer to page
MENU	Menu on/off button	7
Δ+/-	Select buttons	7
OK	OK (confirming) button	7
←	Back button	7

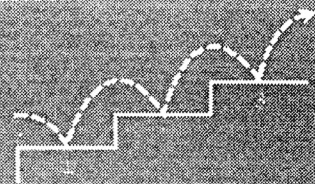
### Video operation

Symbol	Name	Refer to page
VTR1/2/3, MDP	Video equipment selector	22
⓪	Video equipment operation buttons	22
PROGR +/-		

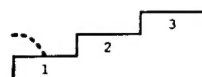
Note:  
The buttons ⓪, ⓪, ⓪, ⓪ do not operate with this TV.



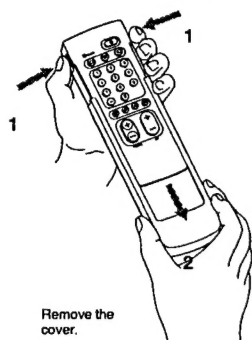
# Getting Started



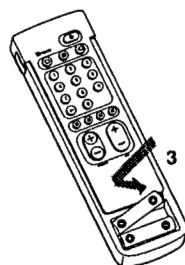
## 1-2. STEP 1 PREPARATION



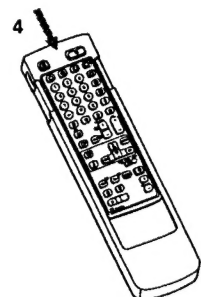
Insert the batteries into the Remote Commander



Remove the cover.



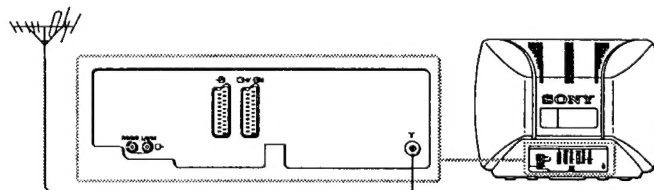
Check the correct polarities.



Refit the outside cover making sure that the Full-Function side is visible to use the menu in Step 3.

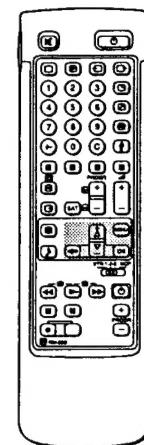
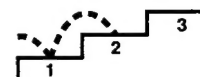
## 1-3. STEP 2 CONNECTION

Connect the aerial



Fit an IEC aerial connector attached to 75-ohm coaxial cable (not supplied) to the T socket at the rear of the TV. Make sure to use an aerial cable, which corresponds to the relevant regulations.

## 1-4. STEP 3 TUNING IN TO TV STATIONS



Once you have set up the TV, you can choose the language of the menu. Then you should preset the channels (up to 100 channels) by choosing either the automatic or manual method.

The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you only have a few channels and want to preset channels one by one. The manual method is also convenient for allocating programme numbers to various video input sources.

### Before you begin

- Check that the Full-Function side of the Remote Commander is visible.
- Locate Menu operation buttons on the Remote Commander. They are shaded in the illustration at the left.

## Choose a language

- 1 Depress  $\odot$  on the TV. The TV will switch on. If the standby indicator on the TV is lit, press  $\square$  or a number button on the Remote Commander.
- 2 Press MENU. The LANGUAGE menu appears (see Fig. 1).
- 3 Select the language you want with  $\Delta$  or  $\nabla$  and press OK.

MENU



Fig. 1.

## Display the Menu

Press the  $\leftarrow$  button. The main menu appears (see Fig.2). Now, choose one of the following methods:  
 «Preset Channels automatically»  
 or  
 «Preset Channels manually».

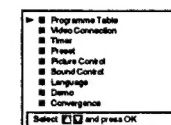


Fig. 2.

To go back to main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.

**Note on the DEMO function**  
If you choose «Demo» on the main menu, you can see a sequential demonstration on the menu functions. Press MENU to stop the function.



With this method, you can preset all receivable channels at once.

To stop automatic channel presetting Press  $\leftarrow$  on the Remote Commander.

#### Notes

• After presetting the channels automatically, you can check which channels are stored on which programme positions. For details, see «Using the Programme Table» on page 16.

• You can exchange the programme positions to have them appear on screen in the order you like. For details, see «Exchanging Programme Positions» on page 10.

3

## Preset channels automatically

- 1 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears. (See Fig. 3.)
- 2 Select «Auto Programme» with  $\Delta$  or  $\nabla$  and press OK. The AUTO PROGRAMME menu appears. (See Fig. 4.)
- 3 Press OK. Select if necessary the TV broadcast system (B/G for western European, D/K for eastern European countries) with  $\Delta$  or  $\nabla$  and press OK. The first element of the «PROG» number will be highlighted.
- 4 Select the programme (number button) from which you want to start presetting. Select the first element of the double-digit number with  $\Delta$  or  $\nabla$  or the number buttons (e.g. For «04», select «0» here) and press OK. The second element of «PROG» will be highlighted.
- 5 Select the second element of the double-digit number with  $\Delta$  or  $\nabla$  or the number buttons (e.g. For «04», select «4» here) (See Fig. 5.) and press OK.
- 6 Select «C» or «S» with  $\Delta$  or  $\nabla$  and press OK. The automatic channel presetting starts. When presetting is finished, the PRESET menu reappears. All available channels are now stored on successive number buttons.

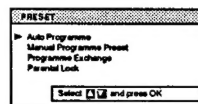


Fig. 3.

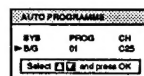


Fig. 4.



Fig. 5.

To tune in a channel by frequency After selecting F in step 6, enter three digits using the number buttons.

- 3 Using  $\Delta$  or  $\nabla$ , select the programme position (number button) to which you want to preset a channel, and press OK.
- 4 Select if necessary, the TV broadcast system (B/G for western European countries, D/K for eastern European countries) or a video input source (EXT) with  $\Delta$  or  $\nabla$ .
- 5 Then press OK. The CH position will be highlighted. (See Fig. 8.)
- 6 Using  $\Delta$  or  $\nabla$ , select C (to preset a regular channel), or F (to tune in by frequency) and press OK. The first element of the «CH» number will be highlighted. If you have selected EXT in step 4, select the video input source with  $\Delta$  or  $\nabla$ . (See Fig. 9).

There are two ways to preset channels. If you know the channel number, go to step «7-Manual», or if you don't know the channel number, go to step «7-Search».

### 7 Manual

- a Select the first element of the «CH» number with  $\Delta$  /  $\nabla$  or the number buttons and press OK. The second element of the «CH» number will be highlighted.
- b Select the second element of the number with  $\Delta$  /  $\nabla$  or the number buttons. The selected number appears. (See Fig. 10.)
- c Press OK. The «SEARCH» position is highlighted and the selected channel is now stored. (See Fig. 11.)
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.

### 7 Search

- a Press OK repeatedly until the colour of the SEARCH position changes.
- b Start searching for the channel with  $\Delta$  (up) or  $\nabla$  (down). The CH number starts counting up or downwards. When a channel is found, it stops. (See Fig. 13).
- c Press OK if you want to store this channel. If not, press  $\Delta$  or  $\nabla$  to continue channel searching.
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.



Fig. 8.



Fig. 9.



Fig. 10.

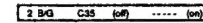


Fig. 11.

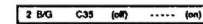


Fig. 12.

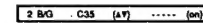


Fig. 13.

Use this method if there are only a few channels in your area to preset or if you want to preset channels one by one. You may also allocate programme numbers to various video input sources.

If you have made a mistake Press  $\leftarrow$  to go back to the previous position. To go back to main menu Keep pressing  $\leftarrow$ . To go back to the normal TV picture Press MENU.

3

## Preset channels manually

- 1 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears. (See Fig. 6.)
- 2 Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 7.)

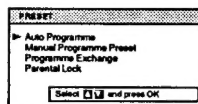


Fig. 6.

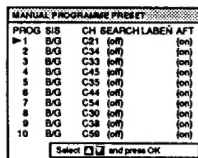


Fig. 7.

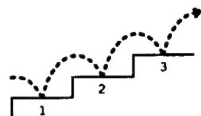
If you have made a mistake Press  $\leftarrow$  to go back to the previous position.

To go back to main menu Keep pressing  $\leftarrow$ .

To go back to the normal TV picture Press MENU.



## 1-5. ADDITIONAL PRESETTING FUNCTIONS

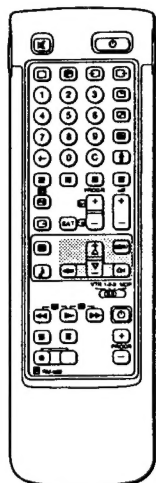


This section shows you additional presetting functions such as exchanging or skipping programme positions, captioning a station name, manual fine-tuning, and using the parental lock.

### Before you begin

- Check that the Full Function side of the Remote Commander is visible.
- Locate the Menu operation buttons.

### PROGRAMME EXCHANGE



## Exchanging Programme Positions

With this function, you can exchange the programme positions to a preferable order.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select "Programme Exchange" with  $\Delta$  or  $\nabla$  and press OK. The PROGRAMME EXCHANGE menu appears. (See Fig. 14.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to exchange with another and press OK. The colour of the selected position changes. (See Fig. 15.)
- 5 Using  $\Delta$  or  $\nabla$ , select the programme position to be exchanged and press OK. Now the two programme positions have been exchanged. (See Fig. 16.)
- 6 Repeat steps 4 and 5 to exchange other programme positions.

PROG CH	LABEL	PROG CH	LABEL
0	AVI	9	C26 SAT1
1	---	10	C27 RTL
2	C32 ZDF	11	---
3	C41 ARD	12	---
4	---	13	---
5	VIDEOCAM	14	---
6	---	15	---

Fig. 14.

3	C12	ARD	11	---
---	-----	-----	----	-----

Fig. 15.

PROG CH	LABEL	PROG CH	LABEL
0	AVI	9	C26 SAT1
1	---	10	C27 RTL
2	C32 ZDF	11	---
3	C26 ARD	12	---
4	---	13	---
5	VIDEOCAM	14	---
6	---	15	---

Fig. 16.

### MANUAL PROGRAMME PRESET

## Skipping Programme Positions

You can skip unused programme positions when selecting programmes with the PROGR +/- buttons. However, the skipped programmes may still be called up when you use the number buttons.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select "Manual Programme Preset" with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 17.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position which you want to skip and press OK. The "SYS" position changes colour.
- 5 Press  $\Delta$  or  $\nabla$  until "----" appears in the SYSTEM position. (See Fig. 18.)
- 6 Press OK. (See Fig. 19.) When you select programmes using the PROGR +/- buttons, the programme position will be skipped.
- 7 Repeat steps 4 to 6 to skip other programme positions.



PROG	SYS	CH	SEARCH	LABEL	AFT
1	B/G	C21	(off)	----	(on)
2	B/G	C24	(off)	----	(on)
3	B/G	C25	(off)	----	(on)
4	B/G	C27	(off)	----	(on)
5	B/G	C28	(off)	----	(on)
6	B/G	C22	(off)	----	(on)
7	B/G	C26	(off)	----	(on)
8	B/G	C23	(off)	----	(on)
9	B/G	C25	(off)	----	(on)
10	B/G	C29	(off)	----	(on)

Fig. 17.

3	----
---	------

Fig. 18.

3	----
---	------

Fig. 19.

## Captioning a Station Name

You can "name" a channel or an input video source using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. BBC1). Using this function, you can easily identify which channel or video source you are watching.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select "Manual Programme Preset" with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 20.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to caption and press OK repeatedly until the first element of the LABEL position is highlighted.
- 5 Select a letter or number with  $\Delta$  or  $\nabla$  and press OK. The next element will be highlighted. Select other characters in the same way. If you want to leave an element blank, select "----" and press OK. (See Fig. 21.)
- 6 After selecting all the characters, press OK repeatedly until the cursor appears by the next programme position (at the left margin). Now the caption you chose is stored. (See Fig. 22.)
- 7 Repeat steps 5 and 6 to caption names for other channels.

PROG	SYS	CH	SEARCH	LABEL	AFT
1	B/G	C21	(off)	----	(on)
2	B/G	C24	(off)	----	(on)
3	B/G	C25	(off)	----	(on)
4	B/G	C27	(off)	----	(on)
5	B/G	C28	(off)	----	(on)
6	B/G	C22	(off)	----	(on)
7	B/G	C26	(off)	----	(on)
8	B/G	C23	(off)	----	(on)
9	B/G	C25	(off)	----	(on)
10	B/G	C29	(off)	----	(on)

Fig. 20.

2	B/G	C25	(off)	----	(on)
---	-----	-----	-------	------	------

Fig. 21.

2	B/G	C25	(off)	BBC1	(on)
---	-----	-----	-------	------	------

Fig. 22.

If you have made a mistake

Press  $\leftarrow$  to go back to the previous position.

To go back to main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.

## Tuning in a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset. Use the buttons on the Full-Function side of the Remote Commander.

- 1 Press C on the Remote Commander. For cable channels, press C twice. The indication "C" ("S" for cable channels) appears on the screen.
- 2 Enter the double-digit channel number using the number buttons (e.g. for channel 4, first press 0, then 4). The channel appears. However, the channel will not be stored.

For programme positions beyond 15  
The display scrolls automatically.

If you have made a mistake  
Press  $\leftarrow$  to go back to the previous position

To go back to main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.



## MANUAL PROGRAMME PRESET

### Manual Fine-Tuning

Normally, the AFT (automatic fine-tuning) is already operating. However, if the picture is distorted, you can use the manual fine tuning function to obtain better picture reception.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK.  
The PRESET menu appears.
- 3 Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$  and press OK.  
The MANUAL PROGRAMME PRESET menu appears. (See Fig. 23.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position corresponding to the channel which you want to manually fine-tune, and press OK repeatedly until the AFT position changes colour.
- 5 Fine-tune the channel with  $\Delta$  or  $\nabla$  so that you get the best TV reception. As you press the cursor buttons, the frequency changes from -15 to +15. (See Fig. 24.)
- 6 After fine tuning, press OK.  
The cursor appears beside the next programme position (at the left margin). (See Fig. 25.) Now the fine-tuned level is stored.
- 7 Repeat steps 4 to 6 to fine-tune other channels.

To reactivate AFT (automatic fine tuning).  
Repeat from the beginning and select «ON» in step 5.

## PARENTAL LOCK

### Parental Lock

You can prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unsuitable.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK.  
The PRESET menu appears.
- 3 Select «Parental Lock» with  $\Delta$  or  $\nabla$  and press OK.  
The PARENTAL LOCK menu appears. (See Fig. 26.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to block and press OK.  
The CH and LABEL change colour indicating that this programme is now blocked. (See Fig. 27.)
- 5 Repeat step 4 to block other programme positions.

### Cancelling blocking

- 1 On the PARENTAL LOCK menu, select the programme position you want to unblock with  $\Delta$  or  $\nabla$ .
- 2 Press OK.  
The CH and LABEL change colour to normal colour indicating that the blocking has been cancelled.

If you try to select a programme that has been blocked the message «LOCKED» appears on the blank TV screen.

MANUAL PROGRAMME PRESET									
PROG	SYS	CH	SEARCH	LABEL	AFT				
1	B/G	C21	(off)	----	(on)				
2	B/G	C24	(off)	----	(on)				
3	B/G	C25	(off)	----	(on)				
4	B/G	C27	(off)	----	(on)				
5	B/G	C28	(off)	----	(on)				
6	B/G	C29	(off)	----	(on)				
7	B/G	C26	(off)	----	(on)				
8	B/G	C23	(off)	----	(on)				
9	B/G	C23	(off)	----	(on)				
10	B/G	C26	(off)	----	(on)				

Fig. 23.

2	B/G	C35	(off)	----	(3)
---	-----	-----	-------	------	-----

Fig. 24.

2	B/G	C40	(off)	----	(3)
3	B/G	C41	(off)	----	(on)

Fig. 25.

For details of the teletext operation, refer to page 17.

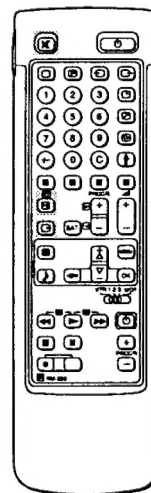
PARENTAL LOCK									
PROG	SYS	LABEL	PROG	CH	LABEL				
0	AV1	VHS	8	C41	----				
1	C25	ARD	9	C43	----				
2	C42	ZDF	10	C48	----				
3	C26	RTL	11	C47	----				
4	C34	SAT1	12	C48	----				
5	C35	----	13	C49	----				
6	C36	----	14	C50	----				
7	C40	----	15	C51	----				

Fig. 26.

PROG	CH	LABEL	PROG	CH	LABEL
0	AV1	VHS			
1	C25	ARD			
2	C42	ZDF			
3	C26	RTL			

Fig. 27.

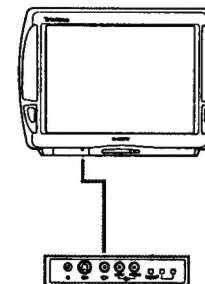
For details of the video input picture, refer to page 21.



## Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can select programmes, adjust the volume, and select video input sources.

- Press the  $\text{P} \rightarrow \Delta \rightarrow \text{E}$  button repeatedly until the programme number,  $\Delta$  (for volume), or  $\text{E}$  (for video input picture) appears. Then adjust with the  $\Delta/\nabla$  buttons.
- Press  $\Delta/\nabla$  buttons to switch on the TV from the standby mode.
- Press  $\Delta/\nabla$  simultaneously to reset picture and sound controls to the factory preset level (RESET function).



## Watching Teletext or Video Input

### Watching teletext

- Press  $\text{E}$  to view the teletext.
- Press three number buttons to select a page.
- Press one of the coloured buttons for fastext or TOP-Text operation.
- Press  $\text{E}$  (PAGE +) or  $\text{E}$  (PAGE -) for the next or preceding page.
- To go back to the normal TV picture, press  $\text{O}$ .

### Watching a video input picture

Press  $\text{E}$  repeatedly until the desired video input appears. To go back to the normal TV picture, press  $\text{O}$ .

## More Convenient Functions

Use the Full-Function side of the Remote Commander.

### Displaying the on screen indications

- Press  $\text{E}$  once to display all the indications. They will disappear after some seconds.
- Press  $\text{E}$  twice to have the programme number and label stay on screen. Press twice again to make the indications disappear.

### Muting the sound

Press  $\text{M}$ .  
To resume normal sound, press  $\text{M}$  again.

### Displaying the time









Press  $\text{E}$ . This function is available only when teletext is broadcast.  
To make the time display disappear, press  $\text{E}$  again.




---


**PICTURE  
CONTROL**


**SOUND  
CONTROL**


- PICTURE CONTROL**
- Contrast 
- Brightness 
- Colour 
- Hue 
- Sharpness 
- Reset 
- Format (4:3)
- Resolution (high)
- Select   and press OK


**SOUND CONTROL**

► Volume 

Treble 

Bass 

Balance 


Reset 

Loudness (off)



Space (off)

Dual Sound (A)

Headphones:

Volume 

Dual Sound (A)

Select   and press OK

Brightness 

Brightness 

Flig. 31.

PICTURE CONTROL	Effect
Contrast	Less ———— More
Brightness	Darker ———— Brighter
Colour	Less ———— More
Hue	Greenish ———— Reddish
Sharpness	Softer ———— Sharper
Reset	Resets picture to the factory preset levels.
Format	4 : 3 : Normal      16 : 9 : Wide screen effect
Resolution	Normal      high : Obtain a higher quality picture

Volume	Less ——— More	
Treble	Less ——— More	
Bass	Less ——— More	
Balance	More left ——— More right	
Reset	Resets sound to the factory preset levels.	
Loudness	off: Normal	on: When listening to low volume sound.
Space	off: Normal	on: Obtain acoustic sound effect.
Dual Sound	A: left channel                      B: right: channel Stereo mono	
	The selected mode of the A-D-B Indicator on the TV lights up (for NICAM broadcasts see next page)	
Headphones :		
Volume	Less ——— More	
Dual Sound	A: left channel	B: right channel    stereo mono

**If you have made a mistake**  
Press **◀** to go back to the previous position.

**To go back to the main menu**  
Keep pressing **◀**.

**To go back to the normal TV picture**  
Press **MENU**.

**Note**  
HUE is only available for NTSC colour systems and RESOLUTION does not work for SECAM colour system.

**Note on LINE OUT**  
The audio level and the dual sound mode output from the G+ jack on the rear correspond to the Headphone VOLUME and DUAL SOUND settings.

**When watching a video input picture**  
You can select DUAL SOUND to change the sound.

This Sony TV has been designed to select Nicam broadcasts when available. Whenever a Nicam broadcast is received «NICAM» appears briefly on the screen. When the Nicam programme ends, or you switch channels to one without Nicam, the A-CD-B indicators, on the TV will switch off.

Nicam programmes can be broadcast in two ways. You may select the sound you want to hear in either of these by first following the instructions explained on page 16.

\* Depending on availability of service.

## PROGRAMME TABLE

On this table, you can see which channel is preset to which programme position. You can also select programmes using this table.

From the main menu, select »Programme Table« with  $\Delta$  or  $\nabla$  and press OK.

The PROGRAMME TABLE menu appears. (See Fig. 32.)

To scroll to higher programme numbers, press  $\Delta$  -.

**To select a programme using this menu**

Select the programme number with  $\Delta$  or  $\nabla$  and press OK.

The selected programme appears.

PROGRAMME TABLE			
PROG CH	LABEL	PROG CH	LABEL
1	C21	11	C36
2	C24	12	C40
3	C26	13	C41
4	C27	14	C43
5	C23	15	C54
6	C22	16	C55
7	C38	17	C56
8	C36	18	C57
9	C38	19	C46
10	C39	20	C48

Select **A** and press OK

**Fig. 32.**

**TIMER**

To check the remaining time  
Press **Ⓢ**.

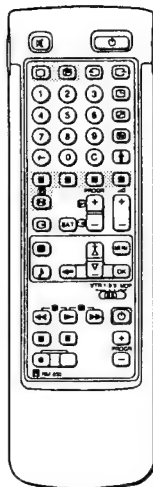
**TIMER**  
 ▶ Sleep Timer (off)  
 Select   and press OK

**Fig. 33.**

- 1 From the main menu, select «Timer» with  $\Delta$  + or  $\nabla$  - and press OK.  
The TIMER menu appears. (See Fig. 33.)
- 2 Press OK.  
The time period option changes colour.
- 3 Select the time period with  $\Delta$  + or  $\nabla$  -.  
The time period (in minutes) changes as follows:  
10 → 20 → 30 → 40 → 50 → 60 → 70 → 80 → 90  
↑ OFF ↓
- 4 After selecting the time period, press OK.  
The cursor moves back to the left margin and the timer starts counting.  
One minute before the TV switches into standby mode, a message is displayed on the screen.



## 1-7. TELETEXT



**Note**  
Teletext errors may occur if the broadcasting signals are weak.

With the simple side of the Remote Commander you can switch teletext on and off, operate Fastext, and directly select page numbers.

TV stations broadcast an information service called Teletext via the TV channels. Teletext service allows you to receive various information pages such as weather reports or news at any time you want. For advanced teletext operation, use the buttons on the Full-Function side of the Remote Commander.

### Direct Access Functions

#### Switching Teletext on and off

- 1 Select the TV channel which carries the teletext broadcast you want to watch.
- 2 Press to switch on teletext.  
A teletext page will be displayed (usually the index page). If there is no teletext broadcast, »No text available« is displayed on the information line at the top of the screen.

To switch teletext off

Press .

#### Selecting a teletext page

With direct page selection

Use the number buttons to input the three digits of the chosen page number.

If you have made a mistake, type in any three digits. Then re-enter the correct page number.

With page-catching

- 1 Select a teletext page with a page overview (e.g. index page).
- 2 Press twice. »Page catching« will be displayed on the information line. The last digit of the first displayed page number flashes.

- 3 Using  $\Delta$ + or  $\nabla$ -, select the desired page and press OK. The requested page will appear in a few seconds.

Accessing next or preceding page

Press (PAGE+) or (PAGE-).  
The next or preceding page appears.

#### Superimposing the teletext display on the TV programme

- Press once in teletext mode or twice in TV mode.
- Press again to resume normal teletext reception.

#### Preventing a teletext page from being updated

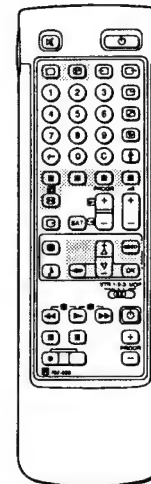
- Press (HOLD). The HOLD symbol "H" is displayed on the information line.
- Press to resume normal teletext reception.

#### Using Fastext

With Fastext you can access pages with one key stroke. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons on the Remote Commander.

Press the corresponding coloured button on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed after a few seconds.

**Note**  
Fastext operation is only possible, if the TV station broadcasts Fastext signals.



**Note**  
Some of the features may not be available depending on the Teletext service.

**Note on SUBTITLES**  
If the subtitles are not broadcast on page 888, please select the subtitle page using the number buttons.

To cancel the request  
Select »OFF« for the TIME PAGE setting.

## Using the Teletext Menu

This TV is provided with a menu-guided teletext system. When teletext is switched in, you can use the menu buttons to operate the teletext menu. Select the teletext menu functions in the following way:

- 1 Press MENU. The menu will be superimposed on the teletext display. (See Fig. 34.)
- 2 Using  $\Delta$ + or  $\nabla$ -, select the teletext function you want and press OK. (See Fig. 35.)

### USER PAGES/PRESET USER PAGES

See page 19 for information about presetting and operating the user pages.

### INDEX

The index will give you an overview of the contents of the teletext and the page numbers.

### TOP/BOTTOM/FULL

For convenient reading of a teletext page, you can enlarge the teletext display. After having selected the function, an information line TOP/BOTTOM/FULL will be displayed. (See Fig. 36.)

Press  $\Delta$ + for »Top« to enlarge the upper half,  $\nabla$ - for »Bottom« to enlarge the lower one and OK for »Full« to resume the normal size.

Press to resume normal teletext reception.

### TEXT CLEAR

After having selected the function, you can watch a TV programme while waiting for a requested teletext page to be displayed. (See Fig. 37.)

Press to resume normal teletext reception.

### SUBTITLES

Your teletext service will inform you if a TV programme is subtitled. After having selected the function the subtitles will be displayed.

### REVEAL

Sometimes Pages contain concealed information, such as answers to a quiz. The reveal option lets you disclose the information. After having selected the function, an information line »REVEAL ON/OFF« will be displayed. (See Fig. 38.)

Using  $\Delta$ + or  $\nabla$ -, select ON to reveal the information of OFF to conceal it again.

Press to resume normal teletext reception.

### TIME PAGE

Your teletext service will inform you, if a time coded page is available. You may have a page (e.g. an alarm page) displayed at a certain time.

- 1 Press OK. Using  $\Delta$ + or  $\nabla$ -, select ON and press OK. The TV programme you were watching before you selected TIME PAGE is restored. An information window will be displayed at the bottom of the page.
- 2 To select the desired page, enter three digits for the page number (e.g. 301) using the number buttons.

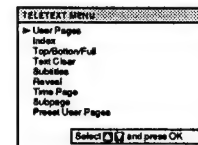


Fig. 34.

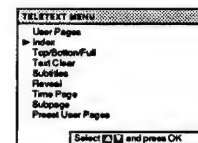


Fig. 35.

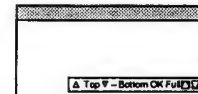


Fig. 36.



Fig. 37.



Fig. 38.



To cancel the request  
Select «Subpage»  
and press OK.

If two  
broadcasting  
stations use the  
same Teletext  
You can preset  
one bank to 2  
different  
programme  
positions.

- 3 To select the desired time, enter four digits for the desired time (e.g. 1800) using the number buttons. The selected time is displayed at the top in the left-handed corner. At the requested time, the page will be displayed.

Press to resume normal teletext mode.

### SUBPAGE

You may want to select a particular teletext page from several subpages which are rotated automatically. After having selected the function, an information line will be displayed.

To select the desired subpage, enter four digits using PROGR +/- or the number buttons (e.g. enter 0002 for the second page of a sequence).

## User Page Bank System

You can store up to 30 pages in the «Teletext page bank system». In this way you have quick access to the pages you watch frequently.

### Storing pages

There are 5 «banks» (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (P1 to P6).

- 1 Press (if Teletext is not on already) and MENU to show the TELETEXT MENU display.
- 2 Select PRESET USER PAGES with  $\Delta$ + or  $\nabla$ - and press OK.
- 3 Select the desired bank with  $\Delta$ + or  $\nabla$ - and press OK. The cursor will go to the first position (P1) of the preferred pages.
- 4 Input the three digits of your first preferred page with the number buttons.  
The cursor will go to the second position.
- 5 Repeat step 4 for the other 5 page numbers you want to preset.  
If you do not want to preset all 6 page numbers available, press OK without inserting any number.
- 6 Select «Allocate Bank» with  $\Delta$ + or  $\nabla$ - and press OK.
- 7 Select the programme position for which you have preset pages with  $\Delta$ + or  $\nabla$ - and press OK. (See Fig. 39.).
- 8 Select the desired bank with  $\Delta$ + or  $\nabla$ - (Banks A to E are available) and press OK.
- 9 Repeat steps 3 to 8 for the other 4 banks available.

### Displaying User Pages.

- 1 Select MENU.
- 2 Select USER PAGES with  $\Delta$ + or  $\nabla$ - and press OK.  
A table of the stored preferred pages will be displayed. (See Fig. 40.)
- 3 Select the desired page with  $\Delta$ + or  $\nabla$ - and press OK. The page will be displayed after some seconds.

PRESET USER PAGES						
BANK	P1	P2	P3	P4	P5	P6
A	300	255	458	234	200	179
B	200	180	301	303	350	345
C	100	220	300	444		
D	128	321	255			
E	400	238	240	118	127	
ALLOCATE BANK						
PROG	LABEL	BANK	PROG	LABEL	BANK	
00	VHS	-	04	MTV	D	
01	ZDF	A	05	SKY	B	
02	ARD	C	06	SAT	C	

Fig. 39.

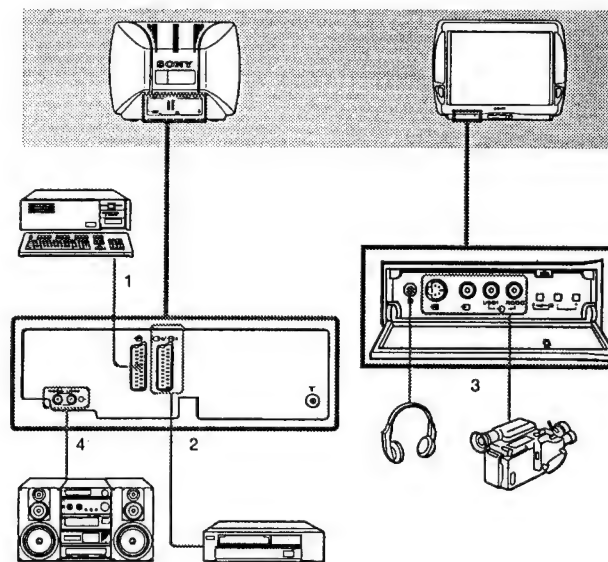
USER PAGES	
PAGE 300	
PAGE 200	
PAGE 203	
PAGE 300	
PAGE 234	
PAGE 128	

Fig. 40.

## 1-8. CONNECTING AND OPERATING OPTIONAL EQUIPMENT

### Connecting Optional Equipment

You can connect optional audio-video equipment to this TV such as a VTRs, video disc player, and stereo system.



To connect a VTR  
using the T terminal  
Connect the serial  
output of the VTR to  
the aerial terminal T  
of the TV.  
We recommend that  
you tune in the video  
signal to programme  
number «0». For  
details see «Preset  
channels manually»  
on page 8.

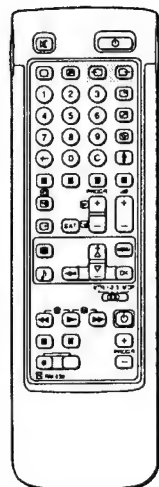
If the picture or the  
sound is distorted  
Move the VTR away  
from the TV.

S video Input(Y/C  
Input)  
Video signals may be  
separated into Y  
(luminance or  
brightness) and C  
(chrominance)  
signals.  
Separating the Y and  
C signals prevents  
them from interfering  
with one another, and  
therefore improves  
picture quality  
(especially  
luminance).  
This TV is equipped  
with 2 S Video input  
jacks through which  
these separated  
signals can be input  
directly.

When connecting a  
monaural VTR  
Connect only the white  
-C- jack to both the  
TV and VTR.

Acceptable input signal	Available output signal
1 Normal audio/video and RGB signal	Video/audio from TV tuner
2 Normal audio/video and S video signal	Video/audio from selected source
3 Normal audio/video and S video signal	No outputs
4 No inputs	Audio signal (variable)





Selecting Input with PROGR +/- or number buttons  
You can preset video input sources to the programme positions so that you can select them with PROGR +/- or number buttons. For details, see "Preset channels manually" on page 8.

## Selecting input and output

This section explains how to view the video input picture (of a video source connected to your TV), and how to select the output signal using direct access buttons or the menu system.

### Selecting input

Press repeatedly to select the input source.

The symbol of the selected input source will appear.

To go back to the normal TV picture

Press .

### Input modes

Symbol	Input signal
1	Audio/video input through the  1 connector
2	RGB input through the  1 connector
2	Audio/video input through the  2/  2 connector
2	S video input through the  2/  2 connector
3	Audio/video input through  3 and  3 on the front
3	S video input through the  3 connectors on the front (4-pin connector)

You can also select the input mode using the and buttons on the TV. In this case, first select , and then press / buttons to select the input.

### Selecting the output

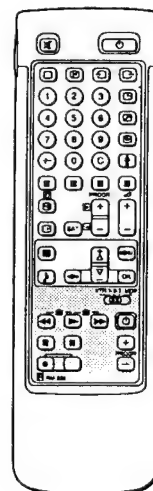
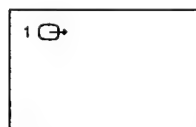
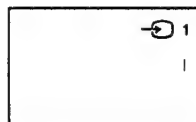
The 2/ 2 connector outputs the source input from the other connectors.

Press repeatedly to select the output.

The symbol of the selected output source appears.

### Output modes

Symbol	2/  2 connector outputs
1	The audio/video signal from the  1 connector
2	The audio/video signal from the  2/  2 connector
2	The audio/S video signal from the  2/  2 connector
3	The audio/video signal from the  3 and  3 connectors
3	The audio/S video signal from the  3 and  3 connectors
TV	The audio/video signal from the "T" aerial terminal



When recording when you use the (record) button, make sure to press this button and the one to the right of it simultaneously.

## Checking and selecting the input and output sources using the menu

You can display the menu to see which input sources are selected for the TV screen, and which output source is selected. You can also select them on the menu display.

- 1 Select "Video Connection" with or and press OK. The VIDEO CONNECTION menu appears. (See Fig. 41.) You can see which source is selected for the TV input and for the output. If you want to select the input and output on this menu, go on to the next step.
- 2 Select TV screen (input source for the TV screen), or Output (output source) with or and press OK. One of the source items changes colour. (See Fig. 42.)
- 3 Select the desired source with or . (See Fig. 43.) For details about each source, see the table on page 21.
- 4 Press OK. The selected source is confirmed, and the cursor appears. (See Fig. 44.)
- 5 Repeat steps 2 to 4 to select the source for other inputs or outputs.

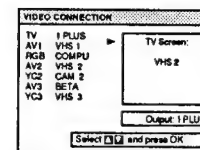


Fig. 41.



Fig. 42.

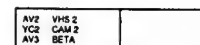


Fig. 43.

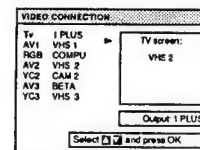


Fig. 44.

## Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most of Sony remote-controlled video equipment such as: Beta, 8 mm or VHS VTRs or video disc players.

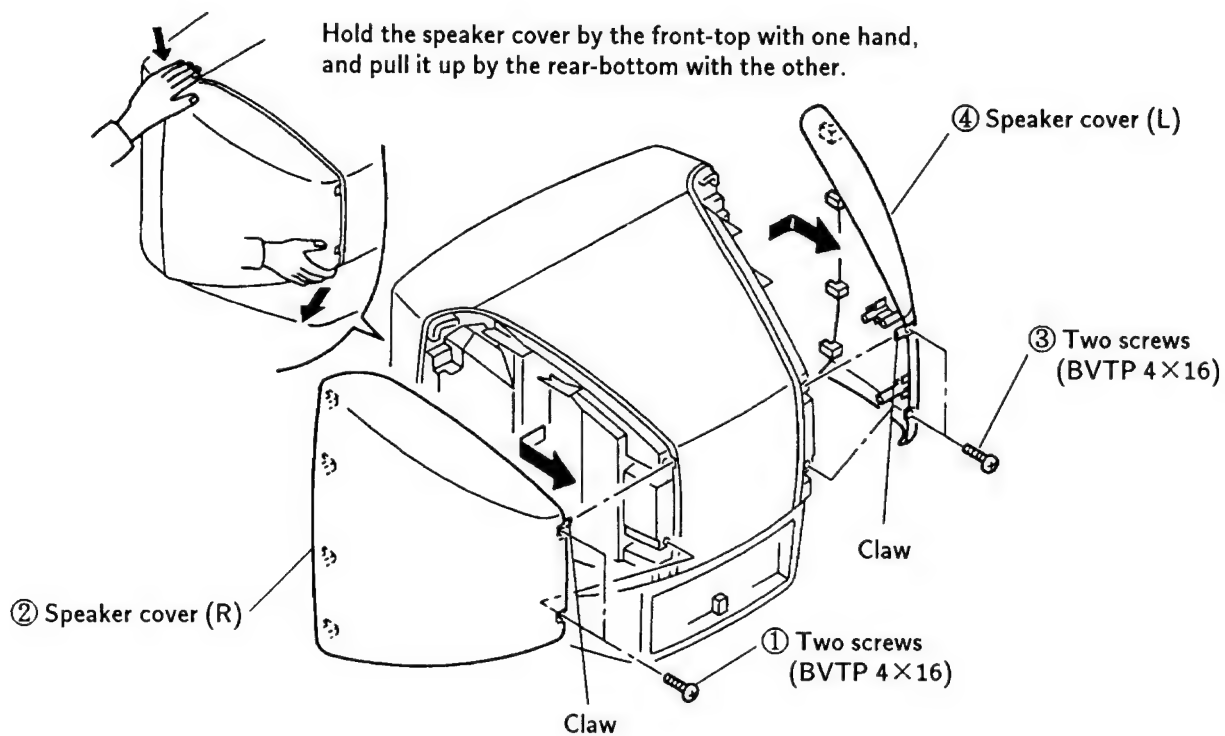
### Tuning the Remote Commander to Sony equipment

- 1 Set the VTR 1/2/3 MDP selector according to the equipment you want to control:  
VTR 1: Beta or ED Beta VTR  
VTR 2: 8 mm VTR  
VTR 3: VHS VTR  
MDP : Video disc player
- 2 Use the buttons indicated in the illustration to operate the additional equipment.  
If your video equipment is furnished with a COMMAND MODE selector, set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.  
If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

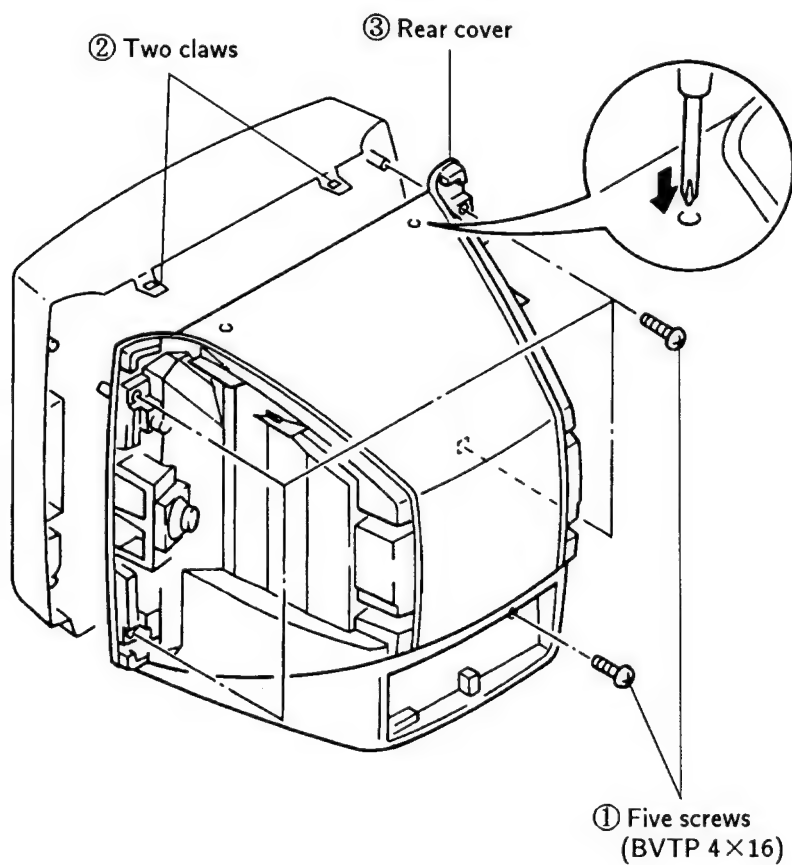


## SECTION 2 DISASSEMBLY

### 2-1. SPEAKER COVER REMOVAL

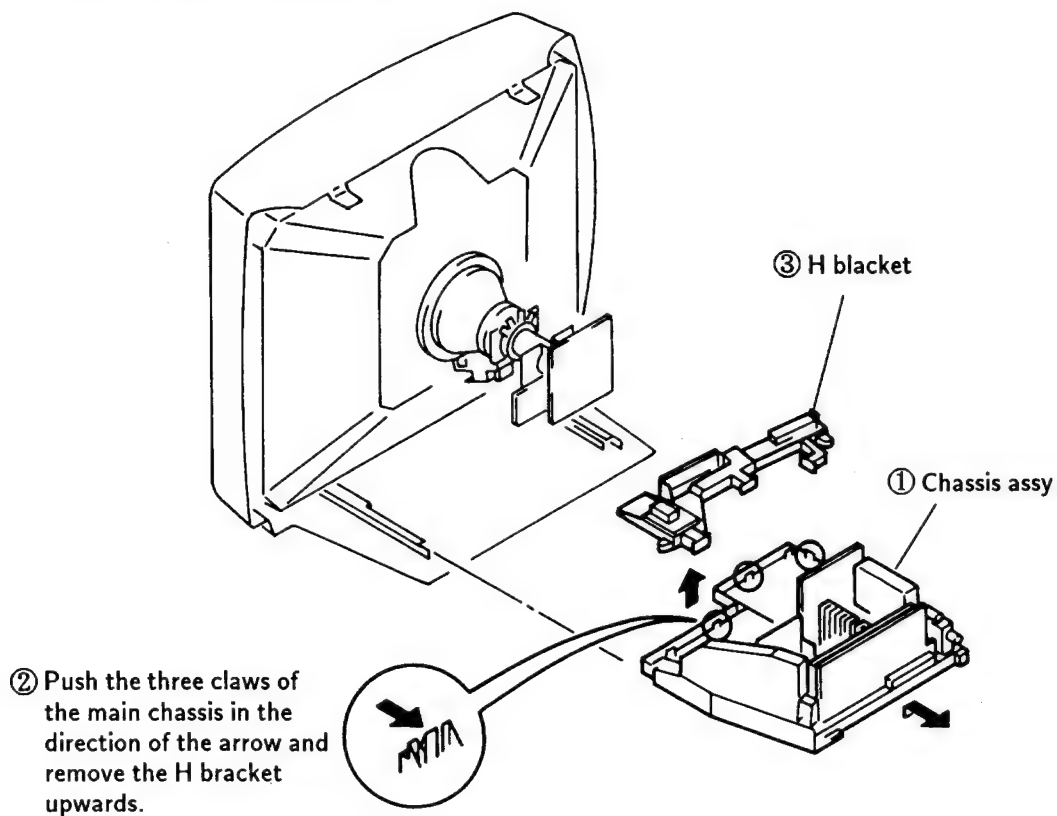


### 2-2. REAR COVER REMOVAL

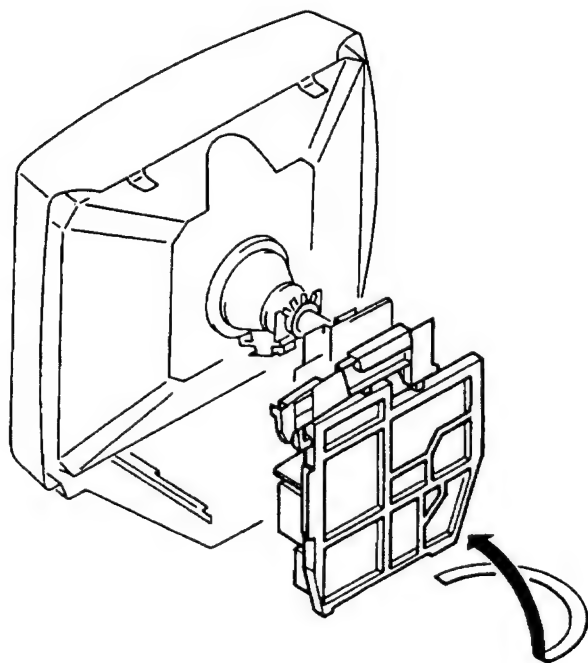




## 2-3. CHASSIS ASSY REMOVAL

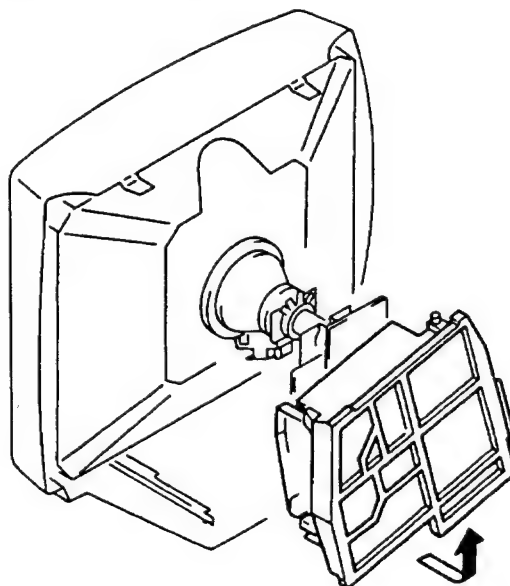


## 2-4. SERVICE POSITION (1)



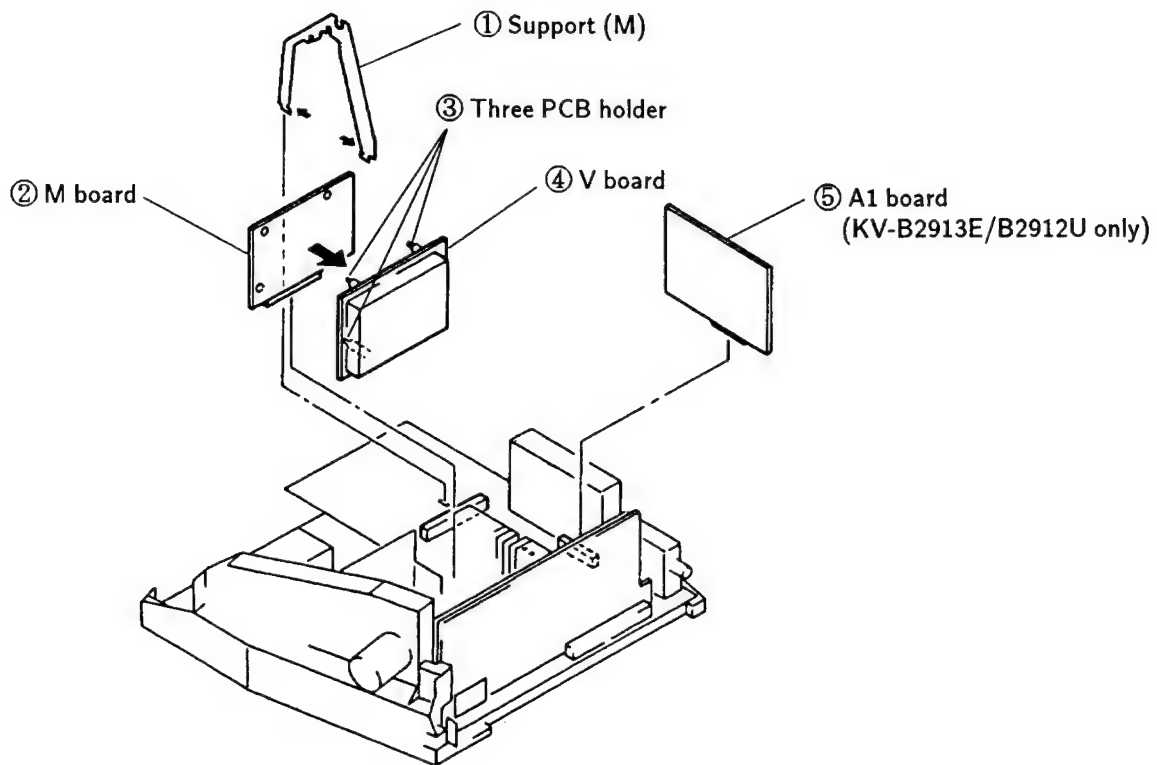
## SERVICE POSITION (2)

※ Remove the H bracket from the chassis assy and then perform the following servicing.  
(Refer to 2-3. CHASSIS ASSY REMOVAL)





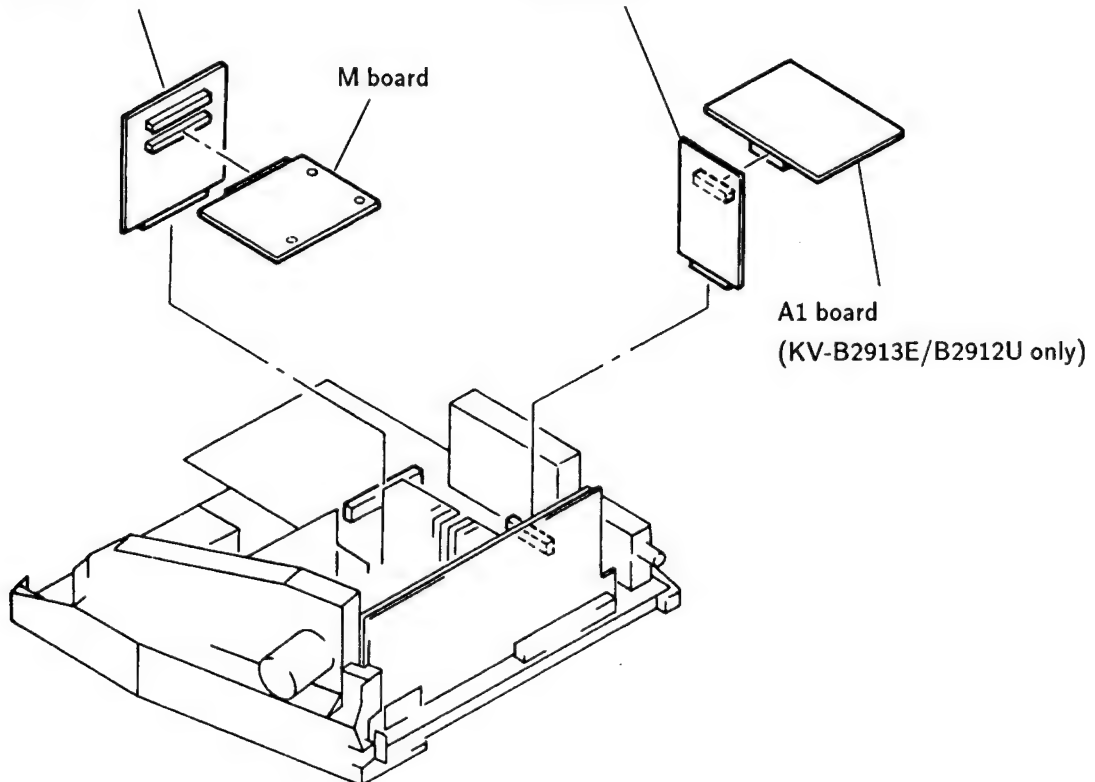
## 2-5. M, V AND A1 BOARDS REMOVAL



## 2-6. EXTENSION BOARD

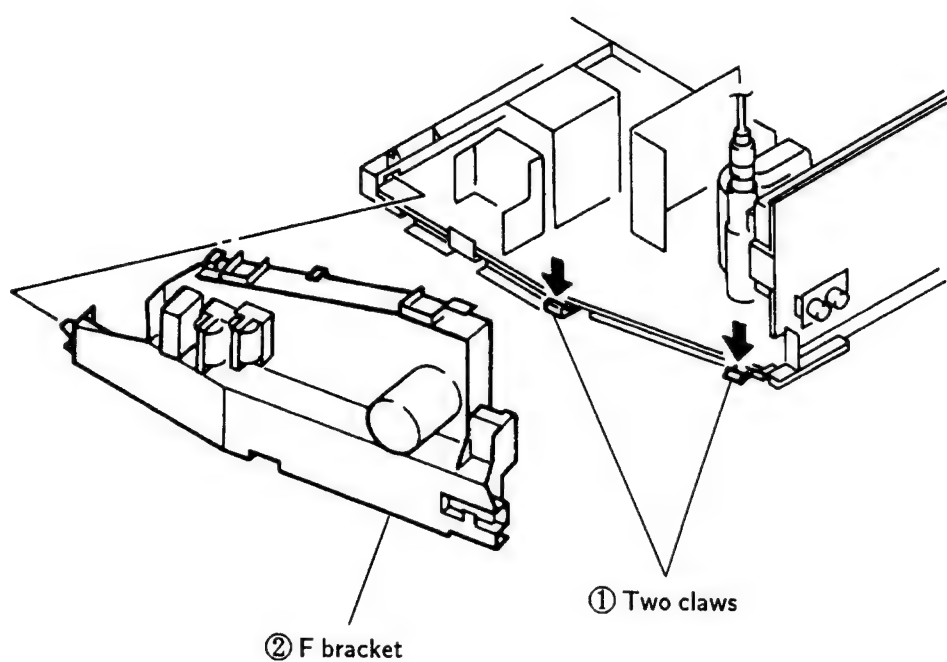
AE2 M extension board  
4-038-321-01

AE2 A1 extension board  
4-038-319-01

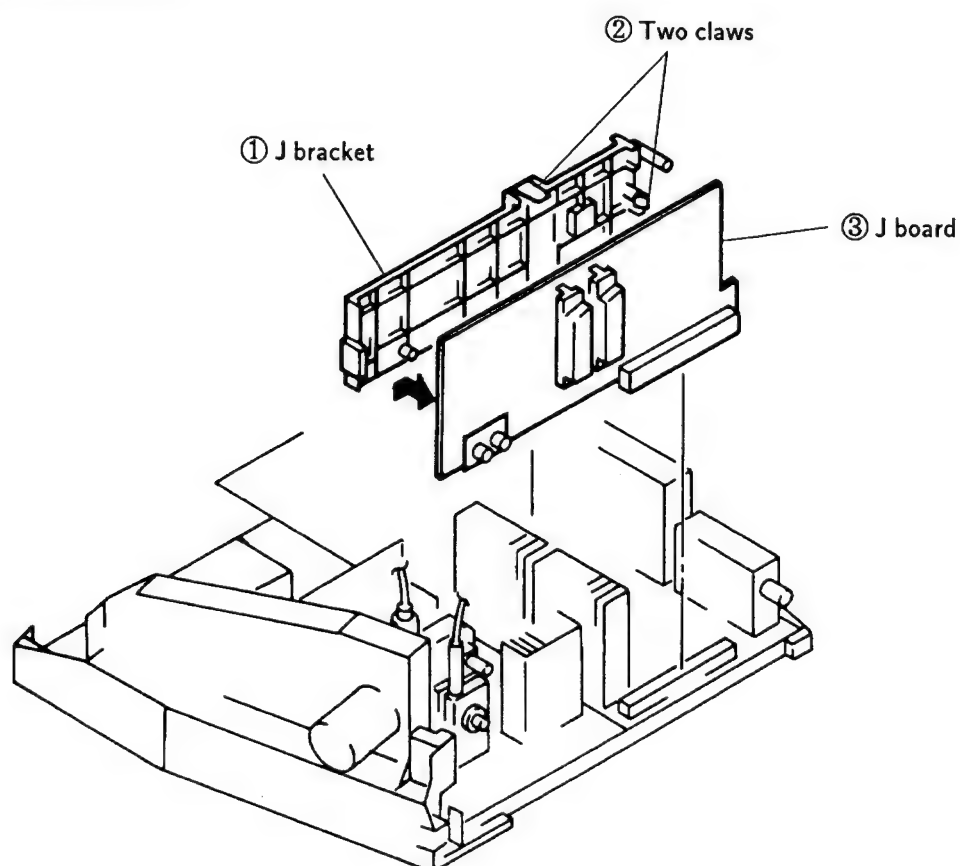




## 2-7. F BRACKET REMOVAL



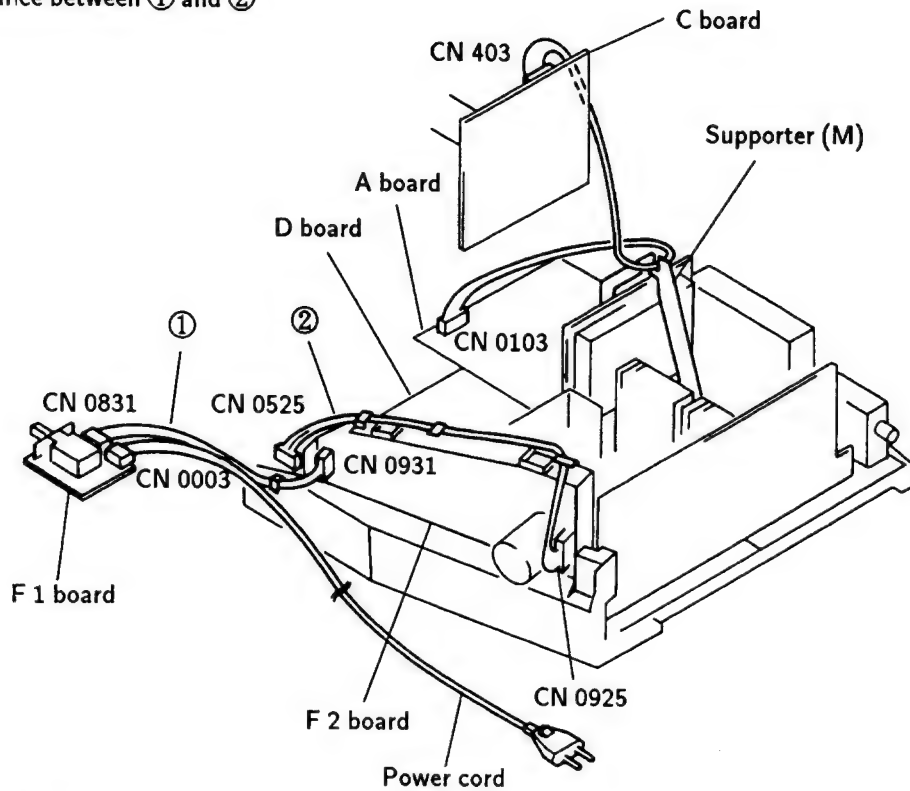
## 2-8. J BOARD REMOVAL



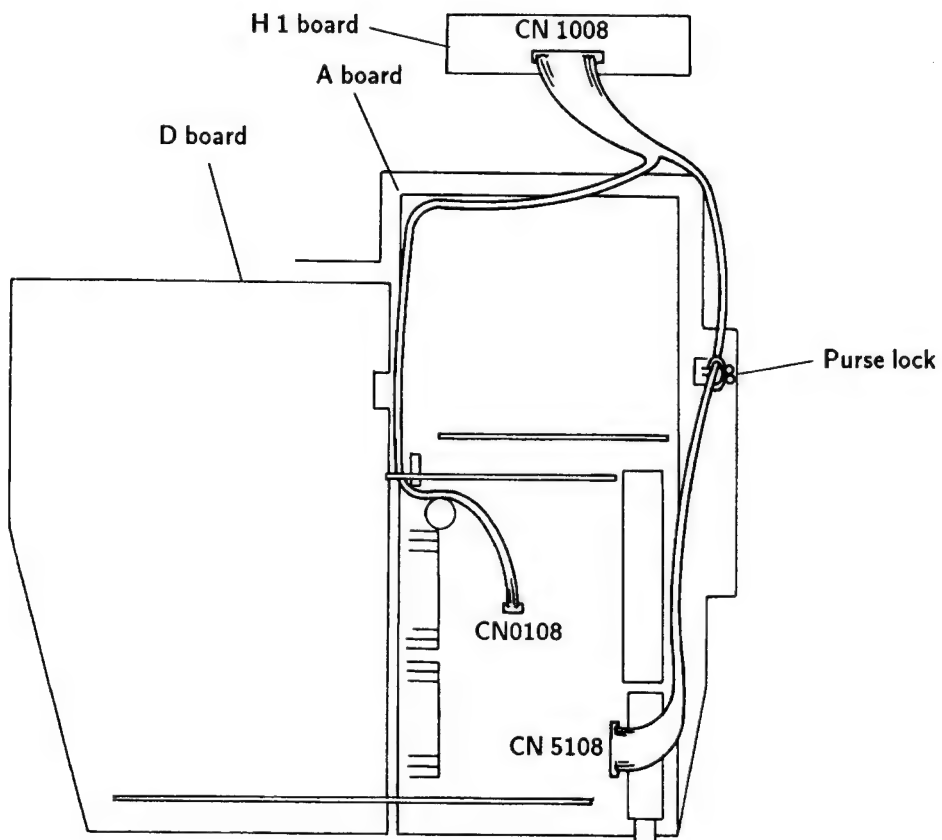


### 2-9-1. WIRE ROD

※ Keep distance between ① and ②

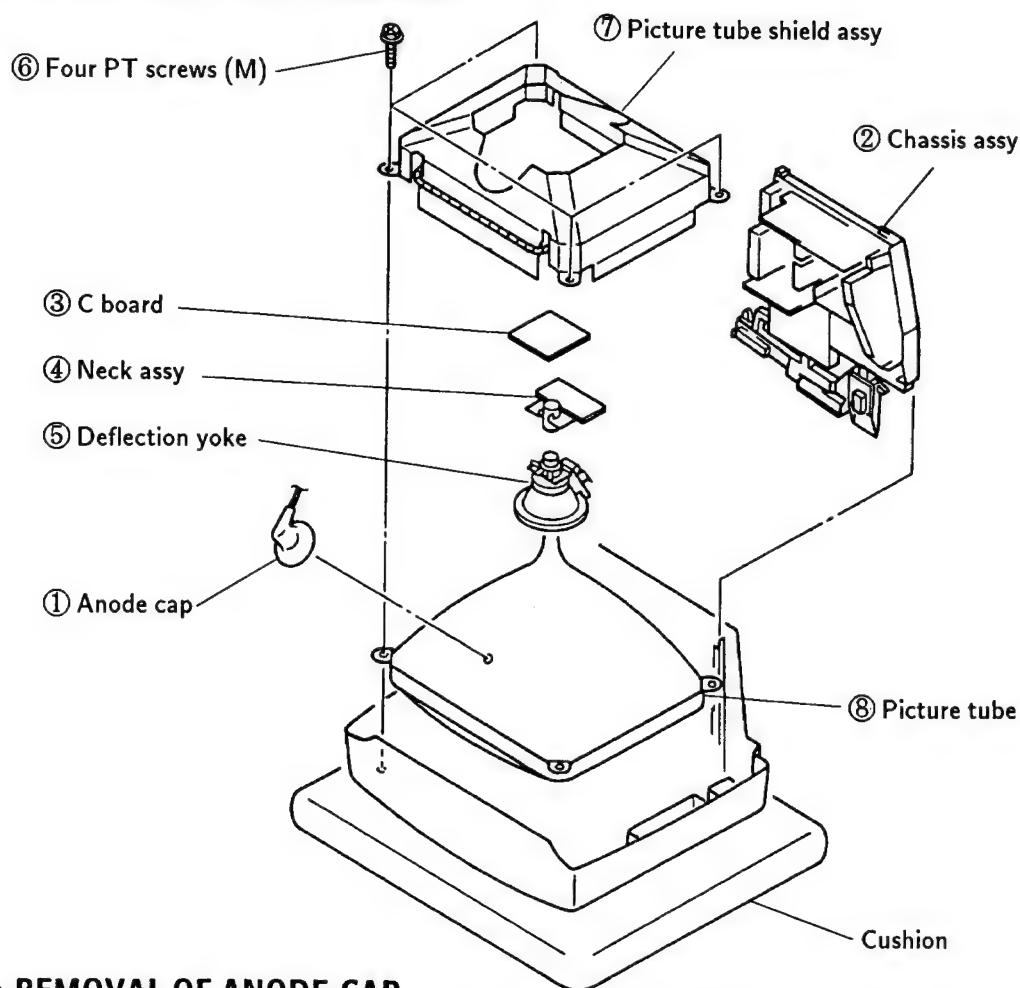


### 2-9-2. WIRE ROD





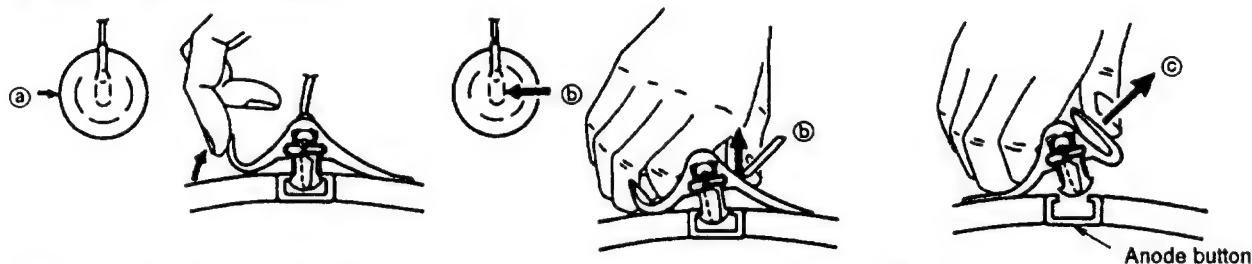
## 2-10. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

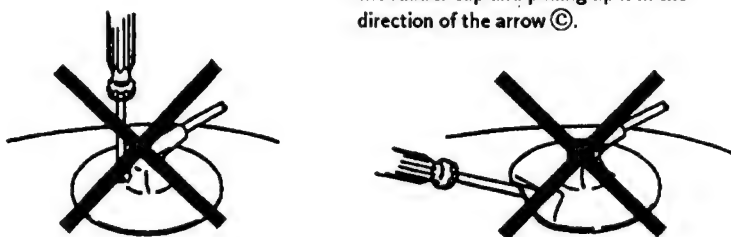
NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon painted on the CRT, after removing the anode.

### • REMOVING PROCEDURES



### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!  
A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly!  
The shatter-hook terminal will stick out or hurt the rubber.





## SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there is specific instruction to the contrary, carry out these adjustments with the rated power supply.
- Unless there is specific instruction to the contrary, set the controls and switches this way :
  - ⓘ Contrast ..... 80% (or remote control normal)
  - ⚙ Brightness ..... 50%

### Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
 

Contrast	}	normal
Brightness		
2. Position neck assy as shown in Fig.3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side. (See Fig.3-1 - 3-3)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Fig.3-1)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig.3-4)

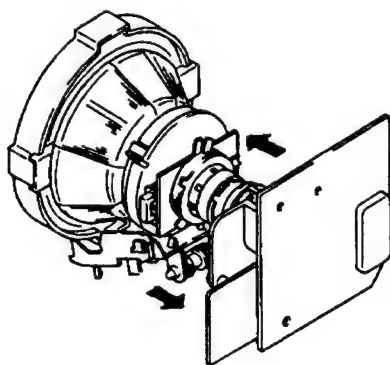


Fig.3-1

- Carry out the following adjustments in this order :
  1. Beam landing
  2. Convergence
  3. Focus
  4. White balance

**Note:** Testing equipment required.

1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

Fig.3-2

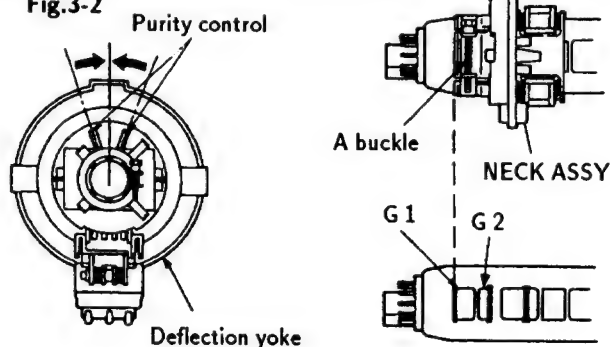


Fig.3-3

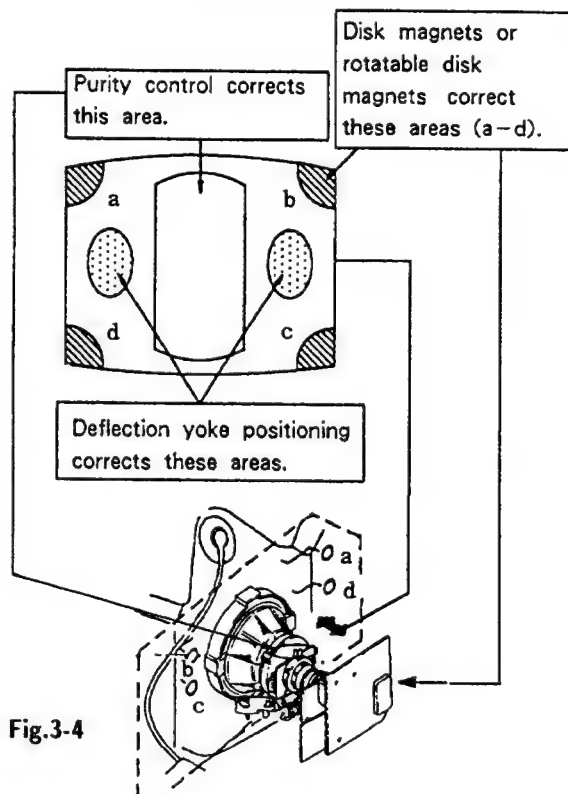
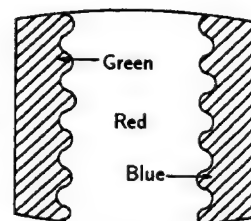


Fig.3-4

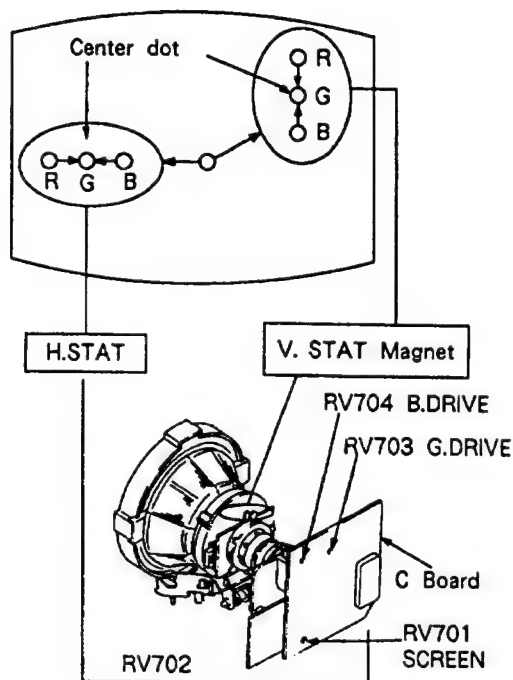


### 3-2. CONVERGENCE

#### Preparations :

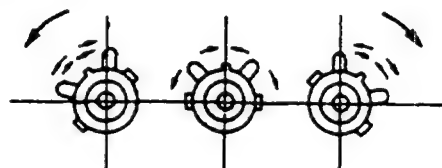
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

#### (1) Horizontal and vertical static convergence

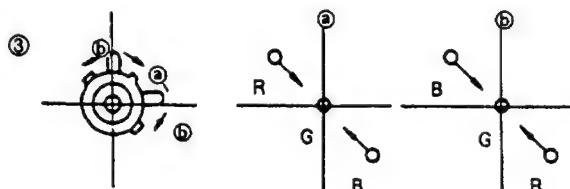
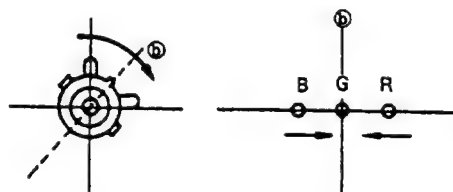
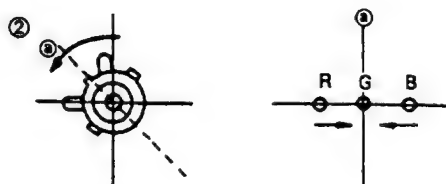
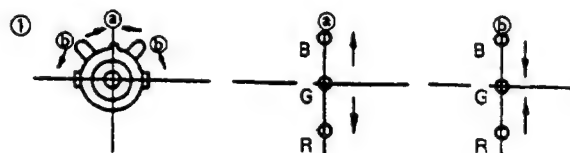


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V. STAT magnet influence each other)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

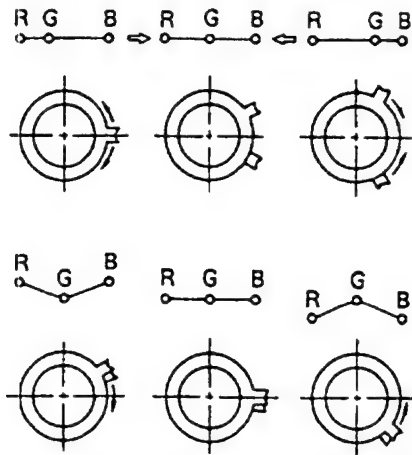


4. If the V.STAT magnet is moved in the direction of the ① and ② arrows, the red, green, and blue points move as shown below.



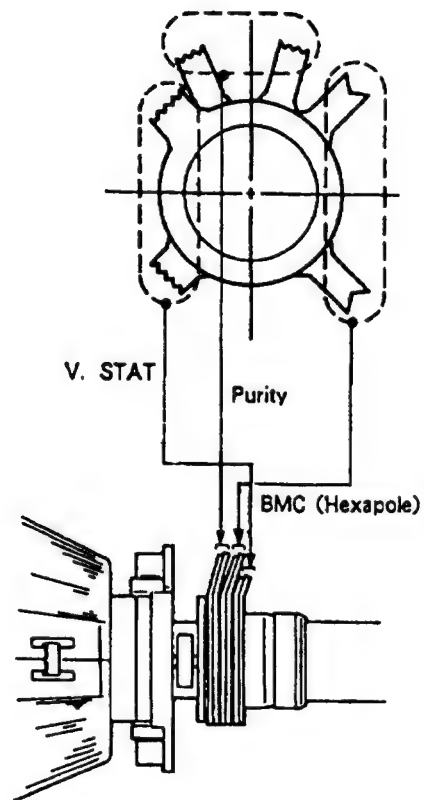


- Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.

Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

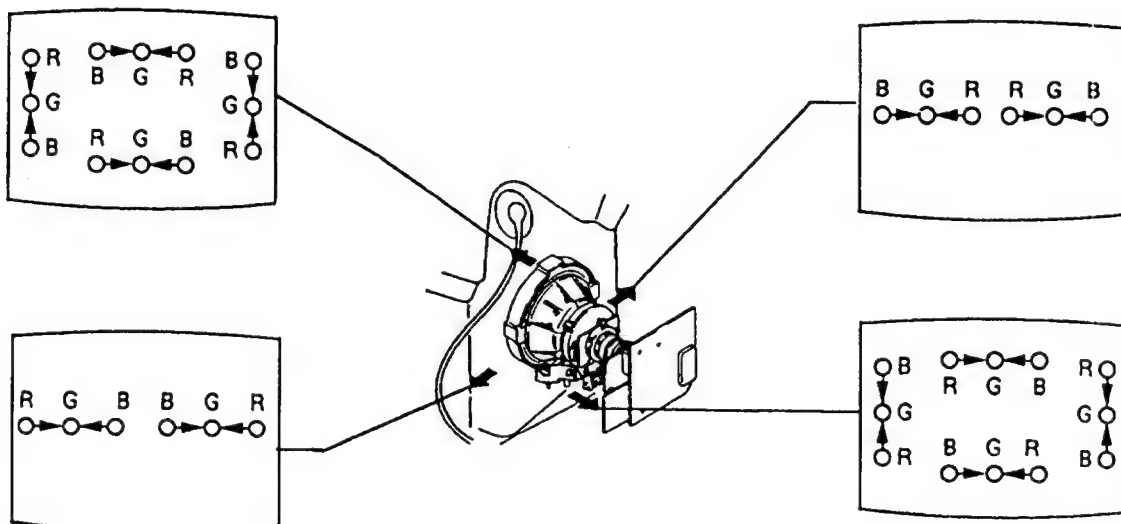




**(2) Dynamic convergence adjustment****Preparations :**

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

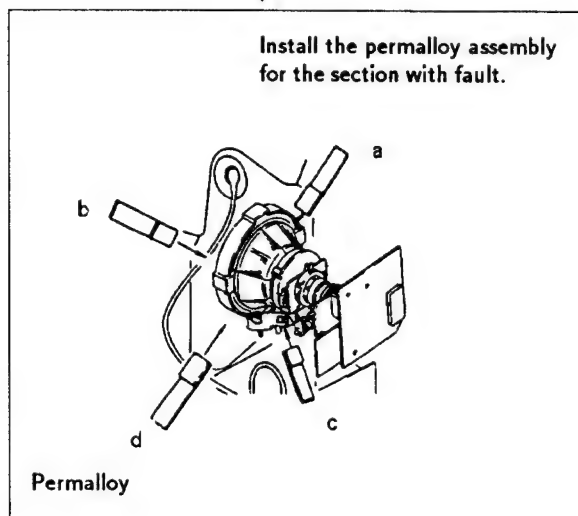
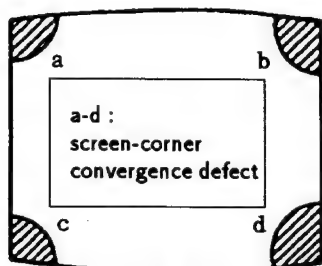
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.





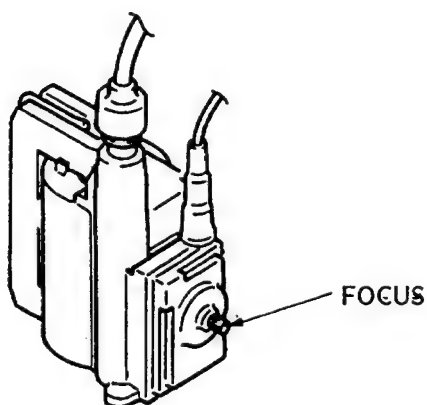
### (3) Screen corner convergence

If you cannot adjust corner convergence properly, correct them with permalloy.



### 3-3. FOCUS

Adjust the focus to optimize the screen.



### 3-4. WHITE BALANCE

#### Screen G2 Setting

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R,G, and B cathodes with an external power supply.
4. While watching the picture, adjust G 2 control RV 701 (Screen) to the point just before the return lines disappear.

#### White balance adjustment

1. Receive all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" to how to enter service mode.)
3. Select CXA1587S on menu.

#### CXA1587S

Item No.	Adjustment item	Data amount
09	SUB BRIGHT	ADJ.
10	SUB HUE	8
11	VM LEVEL	2
12	NR LEVEL	0
13	ABL MODE	0
14	G-DRIVE	ADJ.
15	B-DRIVE	ADJ.
16	G-AUTO CUT OFF	ADJ.
17	B-AUTO CUT OFF	ADJ.
18	R-MANUAL CUT OFF	ADJ.
19	G-MANUAL CUT OFF	ADJ.
20	B-MANUAL CUT OFF	ADJ.

4. Set picture to MAX.
5. Adjust G-DRIVE B-DRIVE with buttons so that the white balance becomes optimum.
6. Press **OK** button to write the data for each item.
7. Set picture to MIN.
8. Adjust G-AUTO CUT OFF, B-AUTO CUT OFF, R-MANUAL CUT OFF, G-MANUAL CUT OFF and B-MANUAL CUT OFF with buttons so that the white balance becomes optimum.
9. Press **OK** button to write the data for each item.



## SECTION 4 CIRCUIT ADJUSTMENTS

### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander, RM-830.

#### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set while pressing any two buttons on the front panel.

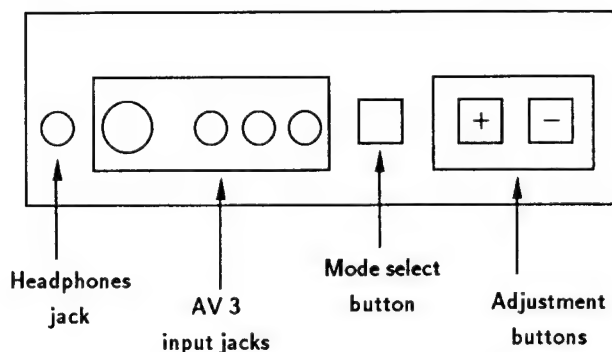


Fig.4-1

2. "TT" will appear on the upper right corner of the screen.

Command operation in service mode

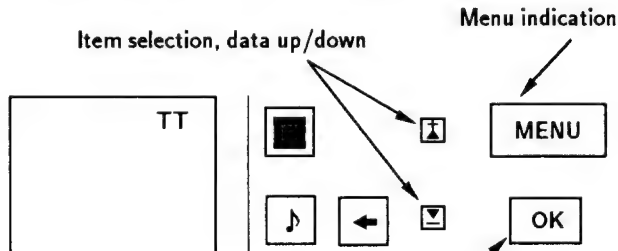


Fig.4-2

Fig.4-3

3. Press the **MENU** button of the commander to get the menu on screen.

MAIN MENU	
Programme Table	
Video Connection	
Timer	
Preset	
Picture Control	
Sound Control	
Language	
> DEMO	
Select   and press OK	

Fig.4-4

4. Press the and buttons of the commander and move > to DEMO.
5. Press **OK** button to proceed to the next menu.
6. The menu of fig.4-5 will appear on screen. Select DEVICE corresponding to the adjustment item from the table on next page.

DEVICES	
Initialize	
> CXA 1587 S	
CXD 2018	
TDA 9145	
CXA 1526	
TDA 6612	
CX 7948 A	
P/P SERVICE	
Select   and press OK	

Fig.4-5

7. If adjustment item is CXA 1587 S, press the button and move > to CXA 1587 S.
8. Press **OK** button to get the next selection menu.

#### CXA 1587 S

Item No.	Adjustment item	Data Amount
01	PICTURE	53
02	COLOR	31
03	BRIGHT	31
04	HUE	31
05	SHARPNESS	7
06	RGB PICTURE	10
07	SUB CONTRAST	8
08	SUB COLOR	8
09	SUB BRIGHT	31
10	SUB HUE	8
11	VM LEVEL	2
12	NR LEVEL	0
13	ABL MODE	0
14	G-DRIVE	32
15	B-DRIVE	32

9. Press button and move > to the adjustment item and press **OK** button.
10. Press the and buttons to change the data in order to comply each standard.
11. Press **OK** button to write data.
12. Turn off the power to quit service mode when completing the adjustment.



## CXA1587S

Item No.	Adjustment item	Data Amount
01	PICTURE	53
02	COLOR	31
03	BRIGHT	31
04	HUE	31
05	SHARPNESS	7
06	RGB PICTURE	10
07	SUB CONTRAST	8
08	SUB COLOR	ADJ.
09	SUB BRIGHT	ADJ.
10	SUB HUE	8
11	VM LEVEL	2
12	NR LEVEL	0
13	ABL MODE	0
14	G-DRIVE	ADJ.
15	B-DRIVE	ADJ.
16	G-AUTO CUT OFF	ADJ.
17	B-AUTO CUT OFF	ADJ.
18	R-MANUAL CUT OFF	ADJ.
19	G-MANUAL CUT OFF	ADJ.
20	B-MANUAL CUT OFF	ADJ.
21	GAMMA LEVEL	0
22	DC TRANSFER RATIO	0
23	DYNAMIC PICTURE	0
24	Y FILTER ADJ	ADJ.
25	Y DELAY TIME	15
26	Y DELAY SWITCH 1	OFF
27	Y DELAY SWITCH 2	ON
28	SHARPNESS LIMIT	ON
29	ALL BLK	OFF
30	H SHIFT	32
31	DAC TEST	AUTO
32	PRE/OVER SHOOT	8
33	SHARPNESS FO	2
34	SUB SHARPNESS	3
35	R MUTE	OFF
36	G MUTE	OFF
37	B MUTE	OFF

38	AGING 1	OFF
39	AGING 2	AUTO
40	AKB OFF	ON
41	INHIBIT RGB	OFF
42	FORCED RGB	AUTO
43	V/2 V	ON
44	AXIS	AUTO
45	HUE SW	OFF
46	V EXTENTION	OFF
47	AFC 1	ON
48	AFC 2	OFF
49	AFC OFF	ON
50	REF.POSITION	OFF

## CXD 2018

Item No.	Adjustment item	Data Amount
01	V SIZE	ADJ.
02	V SHIFT	ADJ.
03	S CORRECTION	ADJ.
04	V LINEARITY	ADJ.
05	H SIZE	ADJ.
06	PIN AMP	ADJ.
07	TILT	ADJ.
08	UPPER CORNER	ADJ.
09	LOWER CORNER	ADJ.
10	V BOW	ADJ.
11	ANGLE	ADJ.
12	HV COMP.V	15
13	HV COMP.H	8
14	FRAME SHIFT	OFF
15	FREE RUN 60 Hz	OFF
16	SYSTEM 60 Hz	OFF
17	ASPECT WIDE	OFF
18	DOUBLE SCAN	OFF
19	NON INTERLACE	OFF
20	H SHIFT	ADJ.
21	N/S CORRECTION	ADJ.

Typical Value (OSD based)when receiving PAL Philips pattern.

## TDA 6612

Adjustment item	Data Amount
Stereo-Separation	30

Should be adjusted twice 4 : 3 and 16 : 9 mode.



**Y FILTER ADJUSTMENT**

1. Input PAL RED pattern.
2. Connect an oscilloscope to CN 0403 ① pin (R OUT) on the C board.
3. Enter into service mode and press 3, 8.
4. Adjust data by  $\triangle$  or  $\nabla$  to minimize the chroma element of CN 0403 ① pin.

**SUB BRIGHTNESS ADJUSTMENT**

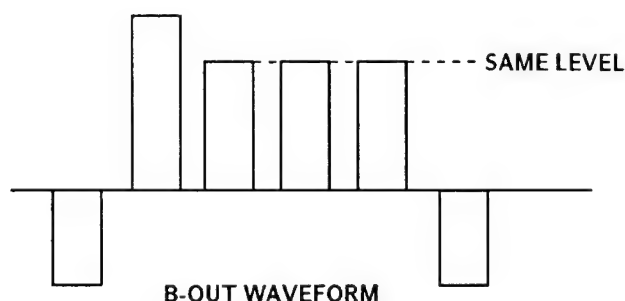
1. Input Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of the grey scale and CUT -OFF 20-IRE glitter slightly.

**SUB CONTRAST ADJUSTMENT**

1. Input a video that contains small 100% area on the Black Back ground.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Adjust data so that 2.5 Vp-p can be obtained at ① CN 0403 (R out).

**SUB COLOR ADJUSTMENT**

1. Input PAL color bar.
2. Connect an oscilloscope to CN 0403 ③ pin (B OUT) on the C board.
3. Enter into service mode and press 22 of CXA 1587 S, 8 SUB COLOR.
4. Adjust data so that the right sides of the waveform will be the same.

**STEREO-SEPARATION ADJUSTMENT**

1. Input 1 kHz stereo signal to the L-ch and 400 Hz stereo signal to the R-ch.
2. Enter into service mode and press 19.
3. Adjust data so that sound does not leak to the R-ch and the L-ch.

**DRIVE AND CUT OFF**

See direct test mode list attached and refer to sub brightness or such for adjustment method.



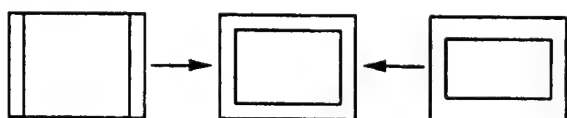
## DEFLECTION SYSTEM ADJUSTMENT

1. Enter into service mode and select CXD 2018.
2. Select and adjust each item in order to get an optimum image.

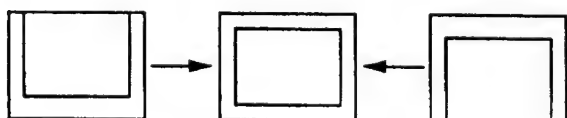
## CXD 2018

Item No.	Adjustment item	Data Amount
01	V SIZE	ADJ.
02	V SHIFT	ADJ.
03	S CORRECTION	ADJ.
04	V LINEARITY	ADJ.
05	H SIZE	ADJ.
06	PIN AMP	ADJ.
07	TILT	ADJ.
08	UPPER CORNER	ADJ.
09	LOWER CORNER	ADJ.
10	V BOW	ADJ.
11	ANGLE	ADJ.
12	HV COMP.V	13
13	HV COMP.H	8
14	FRAME SHIFT	OFF
15	FREE RUN 60 Hz	OFF
16	SYSTEM 60 Hz	OFF
17	ASPECT WIDE	OFF
18	DOUBLE SCAM	OFF
19	NON INTERLACE	ON
20	H SHIFT	32
21	N/S CORRECTION	ADJ.

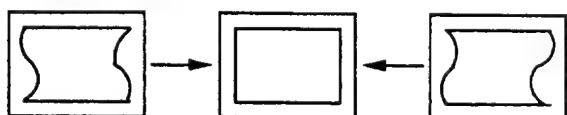
## V SIZE



## V SHIFT



## S CORRECTION



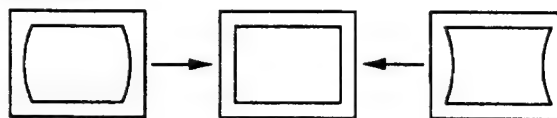
## V LINEARITY



## H SIZE



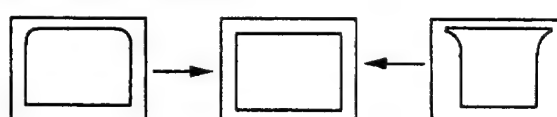
## PIN AMP



## TILT



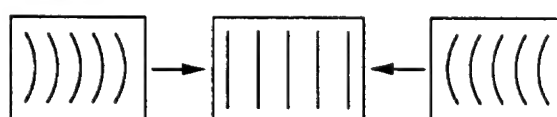
## UPPER CORNER PIN



## LOWER CORNER PIN



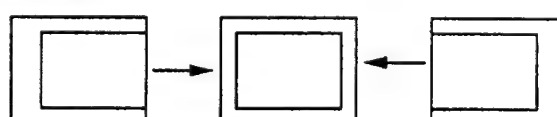
## V BOW



## ANGLE



## H SHIFT



## N/S CORRECTION



3. Press **OK** button to write the data.

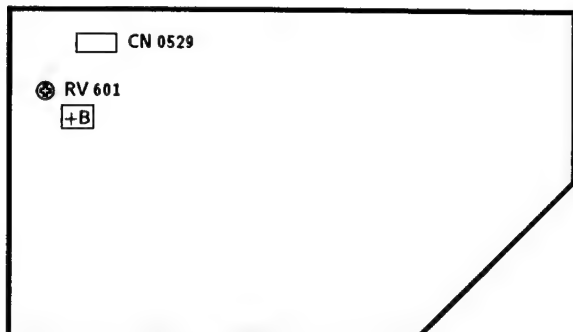
If menu display may disturb the adjustment press **⏏** to clear, to resume it, press **⏏** again.



## 4-2. VOLUME ELECTRICAL ADJUSTMENTS

### +B (+135 V) ADJUSTMENT (RV 601)

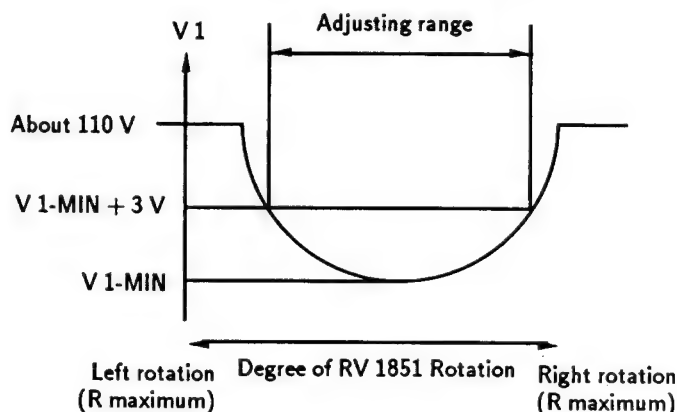
D BOARD



1. Turn on the power of the TV set.
2. Connect a digital multi-meter to ① pin of CN 0529 on D board.
3. Adjust RV 601 on D board to  $+135 \pm 0.5$  V.

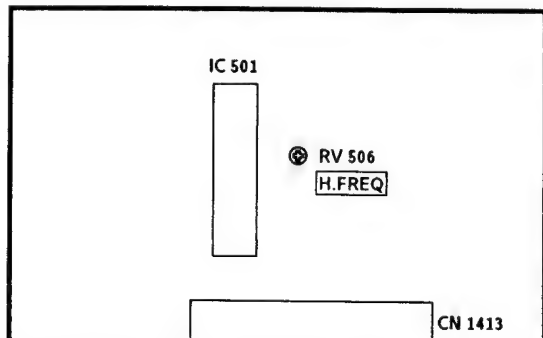
### DRIVE PULSE PHASE ADJUSTMENT(RV 1851)

- 1) While measuring the voltage V 1 at both edges of C 1859, rotate RV 1851 so that it becomes minimum. The adjusting range is from (the voltage at which V 1 becomes minimum) V 1 MIN to 3 V, which means, adjust to between V 1 MIN to V 1 MIN + 3 V.



### H.FREQ ADJUSTMENT (RV 506)

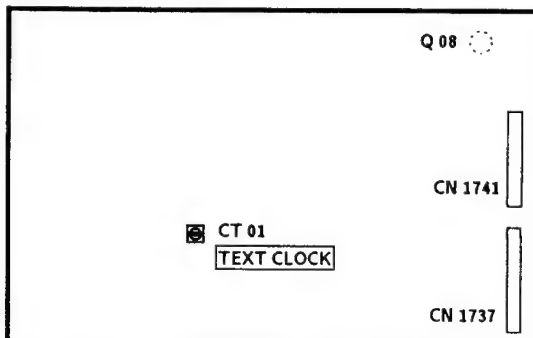
M BOARD



1. Connect GND to ⑫ pin of IC 501 on M board.
2. Connect a frequency counter to ④ pin of IC 501.
3. Adjust RV 506 on M board to  $15,625 \text{ kHz} \pm 10 \text{ Hz}$ .
4. Remove ⑫ pin of IC 501 from GND.

### TEXT CLOCK ADJUSTMENT (CT 01)

V BOARD

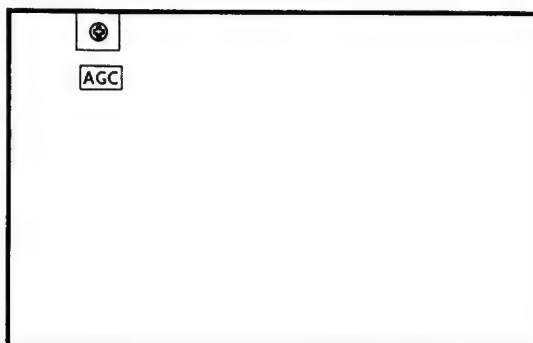
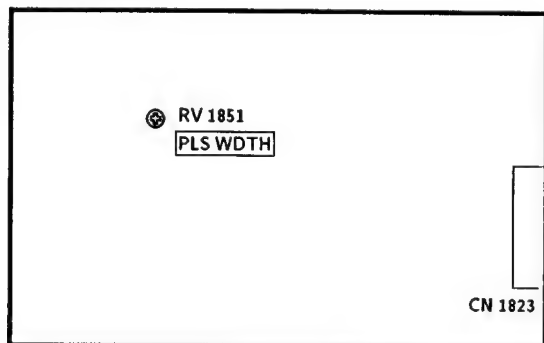


1. Get TEXT MENU on screen.
2. Connect GND and the base of Q 08 on V board.
3. Adjust CT 01 on V board so that the MENU stands still as much as possible.

### AGC ADJUSTMENT (IF BLOCK)

### PLS WDTN

D 2 BOARD



1. Receive off-air signal.
2. Adjust AGC VR so that there is no snow noise and cross-modulation.
3. Change receiving channel and confirm status.



### 4-3. TEST MODE 2 :

Is available by pressing Test button two times, OSD "TT" appears. The functions described bellow are available by pressing the two numbers. To release the Test Mode 2, press two times 0, or switch TV in Standby Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Aging Condition (Volumin., Picture max., Brightness max., Aging 2 Mode of CXA 1587 S, TDA 2595 is locked to CXA 1587S via PIN 34 of $\mu$ -Con.)
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	dummy
10	Tenth entry is deleted
11	Balance
12	Hue
13-14	dummy
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM
17	Preset Level for AV Sources
18	dummy
19	Stereo Separation
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24-29	dummy

30	Tenth entry is deleted
31	Green Drive
32	Blue Drive
33	Green Cut Off (Auto Cut Off)
34	Blue Cut Off (Auto Cut Off)
35	Red Cut Off (Manual Cut Off) (Auto Cut Off is switched off)
36	Green Cut Off (Manual Cut Off) (Auto Cut Off is switched off)
37	Blue Cut Off (Manual Cut Off) (Auto Cut Off is switched off)
38	Y-Filter adjustment (Trap is switched off and TDA 9145 is switched in forced NTSC Mode)
39	dummy
40	Tenth entry is deleted
41	Default setting of CXA 1587S (Only in Plog 99 available)
42	Default setting of CXA 2018 (Only in Plog 99 available)
43	Default setting of CXA 1526 (Only in Plog 99 available)
44	(all Port High) Not yet
45	(all Port High) Not yet
46-48	dummy
49	Erase the NVM Testbyte (this byte detects already stored NMV's) After selecting this function, switch TV Off and On → the NVM will be preset by $\mu$ -Controller. (Not the channel data)

Note: For No. 35, 36, 37 and 38 special pressing (AKB, forced Color Mode, Trap) is selected. After selecting a new Test Mode Number, the AKB is switched ON, the Trap is switched On and TDA 9145 is switched to Auto Search Mode.

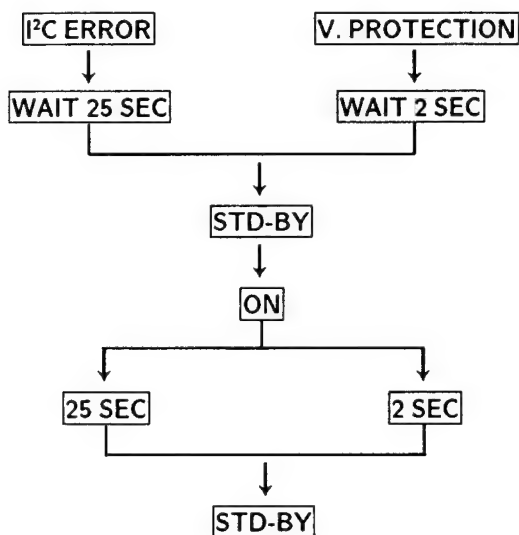
In Test Mode 2 the Menu display is switchable by Speaker-Off button.



#### 4-4. ERROR MESSAGE

Self diagnos system can operate as follows.

- When MP can't get the acknowledge back from the device, LED starts flashing according to the table as attached.



In case of more errors in parallel, the blinking error shows max. Priority according to the error number (e.g. error 2 and error 5 appears together, then LEDs show error 2).

TABLE OF ERRORS

ERROR COUNT	IC TYPE	FUNCTION
1	I <sup>2</sup> C BUS	SDA low
2	X 24 C 16	EEPROM
3	SDA 3202	Tuner PII
4	TDA 9145	Colour decoder
5	CXA 1587S	RGB/Jungle
6	TDA 6612	Sound processor
7	CXD 2018	V deflection
8	CXA 1545	AV switch
11	SDA 5248	Text
13		V protection

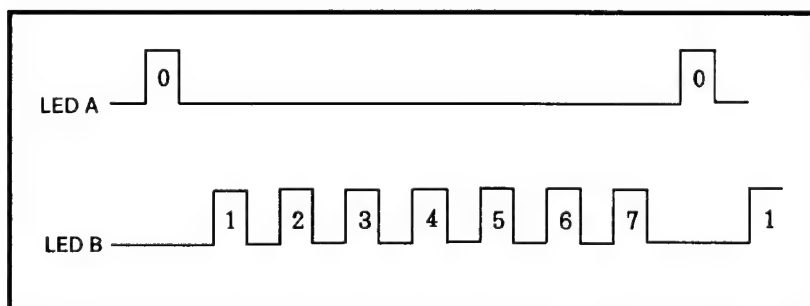
Stand by LED blinking

No IK return

#### 4-5. ERROR I<sup>2</sup>C BUS DIAGNOSIS SYSTEM IN AE 2 CHASSIS

For all ICs in AE2 chassis which are necessary to get picture and sound there is a built in error I<sup>2</sup>C Bus diagnosis system.

In case of no acknowledge bit, LED A and LED B start blinking as shown.

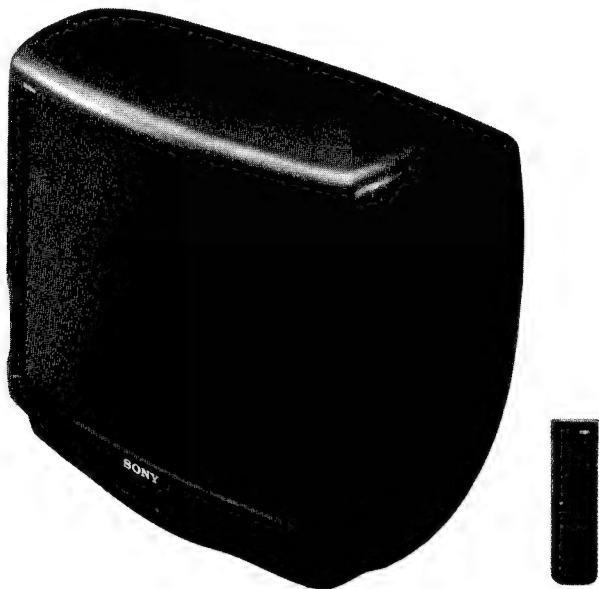




# SERVICE MANUAL

# AE-2 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-B2511A	RM-830	Italian	SCC-F18F-A	KV-B2513E	RM-830	Spanish	SCC-F33F-A
KV-B2511B	RM-830	French	SCC-F32M-A	KV-B2511K	RM-830	OIRT	SCC-F72A-A
KV-B2511D	RM-830	AEP	SCC-F26F-A	KV-B2512U	RM-830	UK	SCC-F25D-A



TRINITRON® COLOR TV  
**SONY®**





ITEM	MODEL	Television system	Stereo system	Channel coverage	Color system
Italian		B/G/H, D/K	GERMAN Stereo	ITALIA VHF:A-H2 (C) UHF:21-69 PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
French		B/G/H, D/K L, I	GERMAN Stereo	L VHF:F02-F10 UHF:F21-F60 CABLE:B-Q B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69 I UHF:B21-B69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
AEP		B/G/H, D/K	GERMAN Stereo	PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
Spanish		B/G/H, D/K	GERMAN/NICAM Stereo	PAL B/G VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
OIRT		B/G/H, D/K	GERMAN Stereo	B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 D/K VHF:R1-R12 UHF:R21-R60	PAL, SECAM NTSC 4.43, NTSC 3.58 (VIDEO IN)
UK		I	NICAM Stereo	UHF:B21-B69	PAL SECAM, NTSC 4.43 NTSC 3.58 (VIDEO IN)

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power consumption	104 Wh	101 Wh	101 Wh	102.5 Wh	100 Wh	151 Wh

Picture tube Hi-Black Trinitron  
Approx. 63 cm  
(Approx. 59 cm picture measured diagonally)  
110° -deflection

#### 【REAR】

- ① 1 21-pin Euro connector (CENELEC standard)
- Inputs for audio and video signals
  - inputs for RGB
  - outputs of TV video and audio signals
- ② 2/- 2 21-pin Euro connector
  - inputs for audio and video signals
  - inputs for S video
  - outputs for audio and video signals (selectable)
- ③ Audio inputs (variable) -phono jacks

#### 【FRONT】

- ④ 3 Video input-phono jack
- ⑤ Audio input-phono jacks
- ⑥ 3 S video input 4-pin DIN
- ⑦ Headphone jack : Stereo minijack
- Sound output 2×15 (RMS)  
2×30 (Music)
- Power requirement 220-240 V
- Dimensions Approx. 663 x 506 x 507 mm
- Weight Approx. 35.5 kg
- Supplied accessories RM-830 Remote Commander (1)  
IEC designation R 6 batteries (2)

#### 【RM-830】


- Remote control system infrared control
- Power requirements 3 V dc  
2 batteries IEC designation R 6 (size AA)
- Dimensions Approx. 65×225×21 mm (w/h/d)
- Weight Approx. 157g (Not including Batteries)

Design and specifications are subject to change without notice.



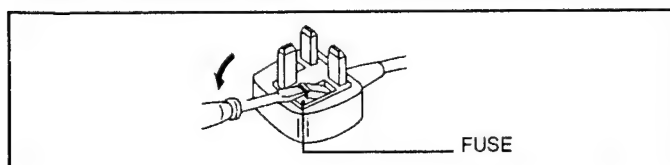
Model name Item	KV-B2511A	KV-B 2511 B	KV-B 2511 D	KV-B 2513 E	KV-B2511K	KV-B 2512 U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PiP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	OFF	OFF	OFF	OFF	OFF
Woofer Box	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Dyn. Convergence	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON
Norm B/G	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	ON
Norm D/K	ON	ON	ON	ON	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Language Preset	Italiano	Francais	Deutsch	None	English	English

## Warning (UK Model only)

The flexible mains lead is supplied connected to a B.S. 1363 fused plug having a fuse of 5 amp capacity. Should the fuse need to be replaced, use 5 AMP FUSE approved by ASTA to BS 1362, ie. carries the  mark.

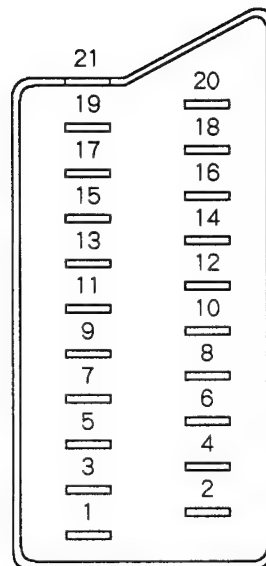
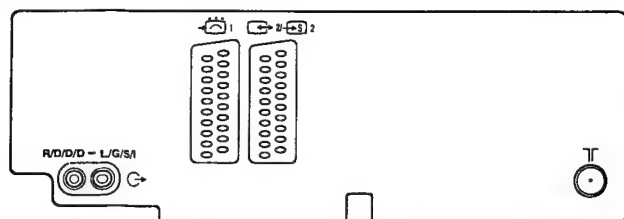
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a 5 AMP FUSE, otherwise the circuit should be protected by a 5 AMP FUSE at the distribution board.





21 pin connector ( 1 2/ 4)



Pin No	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance: Less than 1kohm *
2	○	○	Audio input B (right)	Standard level: 0.5Vrms Input impedance: More than 10kohms *
3	○	○	Audio output A (left)	Standard level: 0.5Vrms Output impedance: Less than 1kohm *
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level: 0.5Vrms Input impedance: More than 10kohms *
7	○	●	Blue input	0.7 ± 3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5 - 12V): Part mode Low state (0 - 2V): TV mode Input impedance: More than 10kohms Input capacitance: Less than 2nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal: 0.7V ± 3dB, 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14	○	○	Ground (blanking)	
15	○	-	Red input	0.7V ± 3dB, 75ohms, positive
	-	○	(S signal) croma input	0.3V ± 3dB, 75ohms, positive
16	○	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance: 75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V ± 3dB, 75ohms, positive Sync: 0.3V (-3, +10dB)
20	○	-	Video input	1V ± 3dB, 75ohms, positive Sync: 0.3V (-3, +10dB)
	-	○	Video Input/Y (S signal)	1V ± 3dB, 75ohms, positive Sync: 0.3V (-3, +10dB)
21	○	○	Common ground (plug, shield)	

○ Connected    ● unconnected (open)    \* at 20Hz - 20kHz



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## CAUTION

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.**

## WARNING !!

**AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.**

## SAFETY-RELATED COMPONENT WARNING!!

**COMPONENTS IDENTIFIED BY SHADING AND MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

## ATTENTION

**APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.**

## ATTENTION!!

**AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.**

## ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

**LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  $\Delta$  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.**



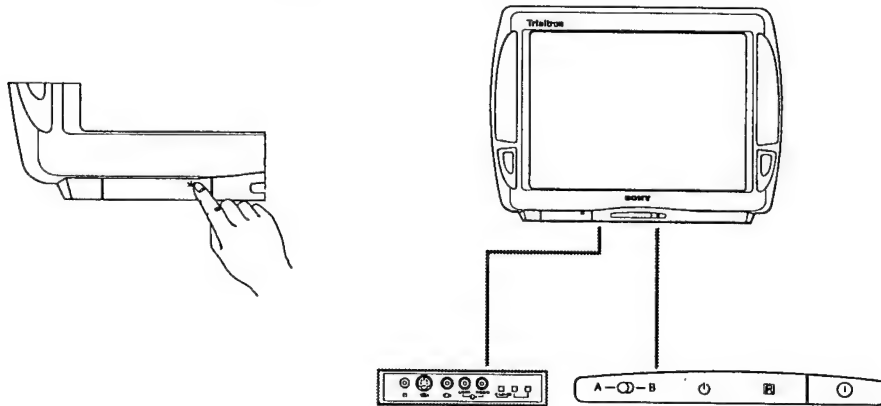
## SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

### 1-1. OVERVIEW

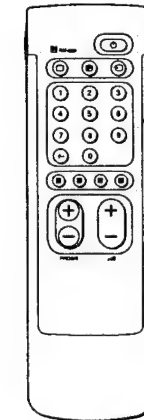
This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

#### TV set-front

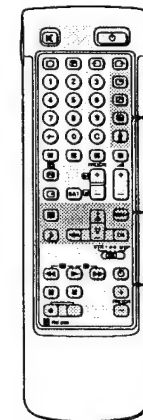


Symbol	Name	Refer to page
⏻	4.6 Main power switch	13
⏻	4.7 Standby indicator	13
A-CD-B	4.8 Stereo A/B indicators	15
🔊	4.9 Headphones jack	20
🔌 3, 🔌 3, 🔌 3	4.10 Input jacks (S video/video/audio)	20
🔍	4.11 Function selector (Programme/volume/input)	14
↔	4.13 Adjustment buttons for function selector	14

#### Remote Commander RM-830



B) Simple side



C) Full-Function side

A) Note  
The SAT button does not operate with this TV.

#### TV/Teletext operation

Symbol	Name	Refer to page
⏻	Muting on/off button	14
⏻	Standby button	13
⏻	TV power on/TV mode selector button	13
📺	Teletext button	14
📺	Input mode selector	14
📺	Output mode selector	21
1,2,3,4,5,6,7,8,9, and 0	Number buttons	13
↔	Double-digit entering button	13
C	Direct channel entering button	10
↔	Volume control button	13
PROGR +/-	Programme selectors	13
📺	Teletext page access buttons	17
📺	Picture adjustment button	15
📺	Sound adjustment button	15
📺	On-screen display button	14
📺	Teletext hold button	17
📺	Time display button	14
📺	Fastext TOP-text buttons	17

#### Menu operation

Symbol	Name	Refer to page
MENU	Menu on/off button	7
△+▽	Select buttons	7
OK	OK (confirming) button	7
←	Back button	7

#### Video operation

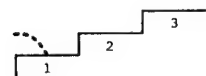
Symbol	Name	Refer to page
VTR1/2/3, MDP	Video equipment selector	22
⏮ ⏪ ⏩ ⏭	Video equipment operation buttons	22
PROGR +/-		

Note:  
The buttons 📺, 🔌, 📺, 📺 do not operate with this TV.

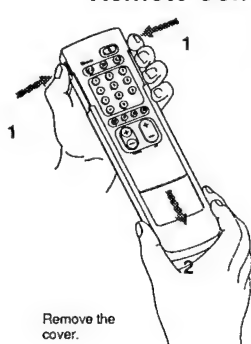


# Getting Started

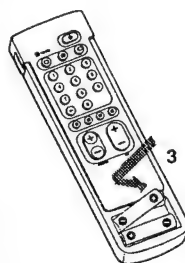
## 1-2. STEP 1 PREPARATION



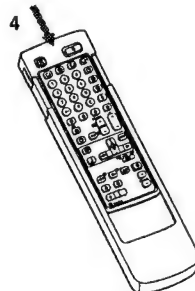
Insert the batteries into the Remote Commander



Remove the cover.



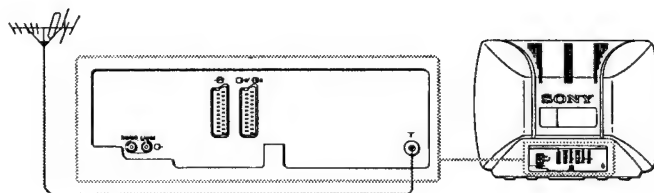
Check the correct polarities.



Refit the outside cover making sure that the Full-Function side is visible to use the menu in Step 3.

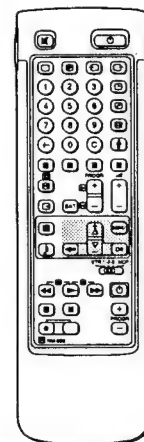
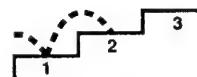
## 1-3. STEP 2 CONNECTION

Connect the aerial



Fit an IEC aerial connector attached to 75-ohm coaxial cable (not supplied) to the T socket at the rear of the TV. Make sure to use an aerial cable, which corresponds to the relevant regulations.

## 1-4. STEP 3 TUNING IN TO TV STATIONS



Once you have set up the TV, you can choose the language of the menu. Then you should preset the channels (up to 100 channels) by choosing either the automatic or manual method.

The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you only have a few channels and want to preset channels one by one. The manual method is also convenient for allocating programme numbers to various video input sources.

### Before you begin

- Check that the Full-Function side of the Remote Commander is visible.
- Locate Menu operation buttons on the Remote Commander. They are shaded in the illustration at the left.

1

### Choose a language

- 1 Depress the TV button. The TV will switch on. If the standby indicator on the TV is lit, press  $\square$  or a number button on the Remote Commander.
- 2 Press MENU. The LANGUAGE menu appears (see Fig. 1).
- 3 Select the language you want with  $\Delta$  or  $\nabla$  and press OK.



Fig. 1.

2

### Display the Menu

- 1 Press the  $\leftarrow$  button. The main menu appears (see Fig. 2). Now, choose one of the following methods:
  - «Preset Channels automatically»
  - or
  - «Preset Channels manually».



Fig. 2.

To go back to main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.

Note on the DEMO function  
If you choose «Demo» on the main menu, you can see a sequential demonstration on the menu functions. Press MENU to stop the function.

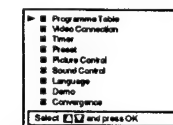


Fig. 2.



With this method, you can preset all receivable channels at once.

To stop automatic channel presetting Press  $\leftarrow$  on the Remote Commander.

#### Notes

• After presetting the channels automatically, you can check which channels are stored on which programme positions. For details, see «Using the Programme Table» on page 16.

• You can exchange the programme positions to have them appear on screen in the order you like. For details, see «Exchanging Programme Positions» on page 10.

3

## Preset channels automatically

- 1 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears. (See Fig. 3.)
- 2 Select «Auto Programme» with  $\Delta$  or  $\nabla$  and press OK. The AUTO PROGRAMME menu appears. (See Fig. 4.)
- 3 Press OK. Select if necessary the TV broadcast system (B/G for western European, D/K for eastern European countries) with  $\Delta$  or  $\nabla$  and press OK. The first element of the «PROG» number will be highlighted.
- 4 Select the programme (number button) from which you want to start presetting. Select the first element of the double-digit number with  $\Delta$  or  $\nabla$  or the number buttons (e.g. For «04», select «0» here) and press OK. The second element of «PROG» will be highlighted.
- 5 Select the second element of the double-digit number with  $\Delta$  or  $\nabla$  or the number buttons (e.g. For «04», select «4» here) (See Fig. 5.) and press OK.
- 6 Select «C» or «S» with  $\Delta$  or  $\nabla$  and press OK. The automatic channel presetting starts. When presetting is finished, the PRESET menu reappears. All available channels are now stored on successive number buttons.

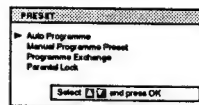


Fig. 3.



Fig. 4.



Fig. 5.

To tune in a channel by frequency After selecting F in step 6, enter three digits using the number buttons.

- 3 Using  $\Delta$  or  $\nabla$ , select the programme position (number button) to which you want to preset a channel, and press OK.
  - 4 Select if necessary, the TV broadcast system (B/G for western European countries, D/K for eastern European countries) or a video input source (EXT) with  $\Delta$  or  $\nabla$ .
  - 5 Then press OK. The CH position will be highlighted. (See Fig. 8.).
  - 6 Using  $\Delta$  or  $\nabla$ , select C (to preset a regular channel), or F (to tune in by frequency) and press OK. The first element of the «CH» number will be highlighted. If you have selected EXT in step 4, select the video input source with  $\Delta$  or  $\nabla$ . (See Fig. 9).
- There are two ways to preset channels. If you know the channel number, go to step «7-Manual», or if you don't know the channel number, go to step «7-Search».

### 7 Manual

- a Select the first element of the «CH» number with  $\Delta$  /  $\nabla$  or the number buttons and press OK. The second element of the «CH» number will be highlighted.
- b Select the second element of the number with  $\Delta$  /  $\nabla$  or the number buttons. The selected number appears. (See Fig. 10.).
- c Press OK. The «SEARCH» position is highlighted and the selected channel is now stored. (See Fig. 11.).
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.

### 7 Search

- a Press OK repeatedly until the colour of the SEARCH position changes.
- b Start searching for the channel with  $\Delta$  (up) or  $\nabla$  (down). The CH position changes colour. (See Fig. 12.). The CH number starts counting up or downwards. When a channel is found, it stops. (See Fig. 13.).
- c Press OK if you want to store this channel. If not, press  $\Delta$  or  $\nabla$  to continue channel searching.
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.



Fig. 8.



Fig. 9.



Fig. 10.

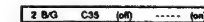


Fig. 11.

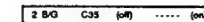


Fig. 12.

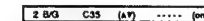


Fig. 13.

If you have made a mistake Press  $\leftarrow$  to go back to the previous position.

To go back to main menu Keep pressing  $\leftarrow$ .

To go back to the normal TV picture Press MENU.

Use this method if there are only a few channels in your area to preset or if you want to preset channels one by one. You may also allocate programme numbers to various video input sources.

If you have made a mistake

Press  $\leftarrow$  to go back to the previous position.

To go back to main menu

Keep pressing  $\leftarrow$ .

To go back to the normal TV picture Press MENU.

3

## Preset channels manually

- 1 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears. (See Fig. 6.)
- 2 Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 7.)

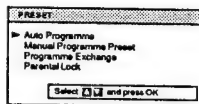


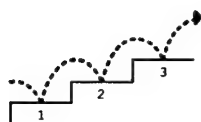
Fig. 6.

MANUAL PROGRAMME PRESET					
PROG	SYS	CH	SEARCH	LABEL	AFT
1	B/G	C21	(off)		(on)
2	B/G	C34	(off)		(on)
3	B/G	C33	(off)		(on)
4	B/G	C43	(off)		(on)
5	B/G	C35	(off)		(on)
6	B/G	C44	(off)		(on)
7	B/G	C54	(off)		(on)
8	B/G	C30	(off)		(on)
9	B/G	C38	(off)		(on)
10	B/G	C59	(off)		(on)

Fig. 7.



## 1-5. ADDITIONAL PRESETTING FUNCTIONS

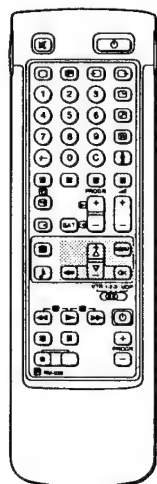


This section shows you additional presetting functions such as exchanging or skipping programme positions, captioning a station name, manual fine-tuning, and using the parental lock.

### Before you begin

- Check that the Full Function side of the Remote Commander is visible.
- Locate the Menu operation buttons.

### PROGRAMME EXCHANGE



## Exchanging Programme Positions

With this function, you can exchange the programme positions to a preferable order.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select "Programme Exchange" with  $\Delta$  or  $\nabla$  and press OK. The PROGRAMME EXCHANGE menu appears. (See Fig. 14.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to exchange with another and press OK. The colour of the selected position changes. (See Fig. 15.)
- 5 Using  $\Delta$  or  $\nabla$ , select the programme position to be exchanged and press OK. Now the two programme positions have been exchanged. (See Fig. 16.)
- 6 Repeat steps 4 and 5 to exchange other programme positions.

PROG CH	LABEL	PROG CH	LABEL
0	AV1 VHS	8	C28 RTL
1	...	9	C29 RTL
2	C32 ZDF	10	...
3	C41 ARD	11	...
4	...	12	...
5	VIDEOCAM	13	...
6	...	14	...
7	...	15	...

Fig. 14.

3	C12	ARD	11	...	...
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Fig. 15.

PROG CH	LABEL	PROG CH	LABEL
0	AV1 VHS	8	C29 RTL
1	...	9	C32 RTL
2	C32 ZDF	10	...
3	C28 ARD	11	...
4	...	12	...
5	VIDEOCAM	13	...
6	...	14	...
7	...	15	...

Fig. 16.

## Tuning in a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset. Use the buttons on the Full-Function side of the Remote Commander.

- 1 Press C on the Remote Commander. For cable channels, press C twice. The indication "C=" (=S= for cable channels) appears on the screen.
- 2 Enter the double-digit channel number using the number buttons (e.g. for channel 4, first press 0, then 4). The channel appears. However, the channel will not be stored.

For programme positions beyond 15  
The display scrolls automatically.

If you have made a mistake  
Press  $\leftarrow$  to go back to the previous position

To go back to main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.

### MANUAL PROGRAMME PRESET

## Skipping Programme Positions

You can skip unused programme positions when selecting programmes with the PROG  $\Delta/\nabla$  buttons. However, the skipped programmes may still be called up when you use the number buttons.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select "Manual Programme Preset" with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 17.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position which you want to skip and press OK. The "SYS" position changes colour.
- 5 Press  $\Delta$  or  $\nabla$  until "----" appears in the SYSTEM position. (See Fig. 18.)
- 6 Press OK. (See Fig. 19.) When you select programmes using the PROG  $\Delta/\nabla$  buttons, the programme position will be skipped.
- 7 Repeat steps 4 to 6 to skip other programme positions.



PROG	SYS	CH	SEARCH	LABEL	AFT
1	B/G	C21	(off)	----	(on)
2	B/G	C24	(off)	----	(on)
3	B/G	C25	(off)	----	(on)
4	B/G	C27	(off)	----	(on)
5	B/G	C28	(off)	----	(on)
6	B/G	C22	(off)	----	(on)
7	B/G	C26	(off)	----	(on)
8	B/G	C25	(off)	----	(on)
9	B/G	C23	(off)	----	(on)
10	B/G	C29	(off)	----	(on)

Fig. 17.

3	----
---	------

Fig. 18.

3	----
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Fig. 19.

## Captioning a Station Name

You can "name" a channel or an input video source using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. BBC1). Using this function, you can easily identify which channel or video source you are watching.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select "Manual Programme Preset" with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 20.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to caption and press OK repeatedly until the first element of the LABEL position is highlighted.
- 5 Select a letter or number with  $\Delta$  or  $\nabla$  and press OK. The next element will be highlighted. Select other characters in the same way. If you want to leave an element blank, select - and press OK. (See Fig. 21.)
- 6 After selecting all the characters, press OK repeatedly until the cursor appears by the next programme position (at the left margin). Now the caption you chose is stored. (See Fig. 22.)
- 7 Repeat steps 5 and 6 to caption names for other channels.

PROG	SYS	CH	SEARCH	LABEL	AFT
1	B/G	C21	(off)	----	(on)
2	B/G	C24	(off)	----	(on)
3	B/G	C25	(off)	----	(on)
4	B/G	C27	(off)	----	(on)
5	B/G	C28	(off)	----	(on)
6	B/G	C22	(off)	----	(on)
7	B/G	C26	(off)	----	(on)
8	B/G	C25	(off)	----	(on)
9	B/G	C23	(off)	----	(on)
10	B/G	C29	(off)	----	(on)

Fig. 20.

2	B/G	C25	(off)	S	----
---	-----	-----	-------	---	------

Fig. 21.

2	B/G	C25	(on)	SONY	(on)
---	-----	-----	------	------	------

Fig. 22.

If you have made a mistake  
Press  $\leftarrow$  to go back to the previous position.

To go back to main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.

### MANUAL PROGRAMME PRESET



## MANUAL PROGRAMME PRESET

### Manual Fine-Tuning

Normally, the AFT (automatic fine-tuning) is already operating. However, if the picture is distorted, you can use the manual fine tuning function to obtain better picture reception.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK.  
The PRESET menu appears.
- 3 Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$  and press OK.  
The MANUAL PROGRAMME PRESET menu appears. (See Fig. 23.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position corresponding to the channel which you want to manually fine-tune, and press OK repeatedly until the AFT position changes colour.
- 5 Fine-tune the channel with  $\Delta$  or  $\nabla$  so that you get the best TV reception. As you press the cursor buttons, the frequency changes from -15 to +15. (See Fig. 24.)
- 6 After fine tuning, press OK.  
The cursor appears beside the next programme position (at the left margin). (See Fig. 25.) Now the fine-tuned level is stored.
- 7 Repeat steps 4 to 6 to fine-tune other channels.

To reactivate AFT (automatic fine tuning).  
Repeat from the beginning and select «ON» in step 5.

PROG	SYS	CH	SEARCH	LABEL	AFT
1	B/G	C21	(off)	----	(on)
2	B/G	C24	(off)	----	(on)
3	B/G	C25	(off)	----	(on)
4	B/G	C27	(off)	----	(on)
5	B/G	C28	(off)	----	(on)
6	B/G	C22	(off)	----	(on)
7	B/G	C26	(off)	----	(on)
8	B/G	C23	(off)	----	(on)
9	B/G	C23	(off)	----	(on)
10	B/G	C29	(off)	----	(on)

Fig. 23.

2	B/G	C35	(off)	----	(3)
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Fig. 24.

2	B/G	C40	(off)	----	(3)
3	B/G	C41	(off)	----	(on)

Fig. 25.

For details of the teletext operation, refer to page 17.

## PARENTAL LOCK

### Parental Lock

You can prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unsuitable.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK.  
The PRESET menu appears.
- 3 Select «Parental Lock» with  $\Delta$  or  $\nabla$  and press OK.  
The PARENTAL LOCK menu appears. (See Fig. 26.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to block and press OK.  
The CH and LABEL change colour indicating that this programme is now blocked. (See Fig. 27.)
- 5 Repeat step 4 to block other programme positions.

### Cancelling blocking

- 1 On the PARENTAL LOCK menu, select the programme position you want to unblock with  $\Delta$  or  $\nabla$ .
- 2 Press OK.  
The CH and LABEL change colour to normal colour indicating that the blocking has been cancelled.

PROG	SYS	LABEL	PROG	CH	LABEL
0	AV1	VHS	8	C41	----
1	C23	ARD	9	C45	----
2	C42	ZDF	10	C46	----
3	C28	RTL	11	C47	----
4	C34	SAT1	12	C48	----
5	C35	----	13	C49	----
6	C36	----	14	C50	----
7	C40	----	15	C51	----

Fig. 26.

PROG	CH	LABEL	PROG	CH	LABEL
0	AV1	VHS			
1	C22	ARD			
2	C42	ZDF			
3	C28	RTL			

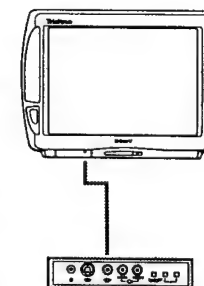
Fig. 27.

If you try to select a programme that has been blocked the message «LOCKED» appears on the blank TV screen.

## Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can select programmes, adjust the volume, and select video input sources.

- Press the  $\text{P} \rightarrow \text{A}$  button repeatedly until the programme number,  $\Delta$  (for volume), or  $\text{V}$  (for video input picture) appears. Then adjust with the  $\rightarrow$  buttons.
- Press  $\rightarrow$  buttons to switch on the TV from the standby mode.
- Press  $\rightarrow$  simultaneously to reset picture and sound controls to the factory preset level (RESET function).



## Watching Teletext or Video Input

### Watching teletext

- Press  $\text{P} \rightarrow \text{A}$  to view the teletext.
- Press three number buttons to select a page.
- Press one of the coloured buttons for fastext or TOP-Text operation.
- Press  $\text{P} \rightarrow \text{A}$  (PAGE +) or  $\text{P} \rightarrow \text{B}$  (PAGE -) for the next or preceding page.
- To go back to the normal TV picture, press  $\text{P} \rightarrow \text{A}$ .

### Watching a video input picture

Press  $\text{P} \rightarrow \text{V}$  repeatedly until the desired video input appears. To go back to the normal TV picture, press  $\text{P} \rightarrow \text{A}$ .

## More Convenient Functions

Use the Full-Function side of the Remote Commander.

### Displaying the on screen Indications

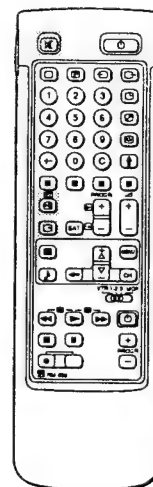
- Press  $\text{P} \rightarrow \text{A}$  once to display all the indications. They will disappear after some seconds.
- Press  $\text{P} \rightarrow \text{A}$  twice to have the programme number and label stay on screen. Press twice again to make the indications disappear.

### Muting the sound

Press  $\text{P} \rightarrow \text{M}$ .  
To resume normal sound, press  $\text{P} \rightarrow \text{M}$  again.

### Displaying the time

Press  $\text{P} \rightarrow \text{T}$ . This function is available only when teletext is broadcast.  
To make the time display disappear, press  $\text{P} \rightarrow \text{T}$  again.

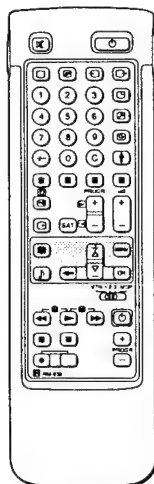




## 1-6. ADJUSTING AND SETTING THE TV USING THE MENU

### PICTURE CONTROL

### SOUND CONTROL



If you have made a mistake  
Press  $\leftarrow$  to go back to the previous position.

To go back to the main menu  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture  
Press MENU.

**Note**  
HUE is only available for NTSC colour systems and RESOLUTION does not work for SECAM colour system.

**Note on LINE OUT**  
The audio level and the dual sound mode output from the G+ jack on the rear correspond to the Headphone VOLUME and DUAL SOUND SETTINGS.

When watching a video input picture  
You can select DUAL SOUND to change the sound.

## Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste. In addition, you can change the aspect ratio of the TV display for wide screen effect or set the resolution to obtain a higher quality picture. You can also select dual sound (bilingual) programmes when available or adjust the sound for listening with the headphones.

- 1 Press  $\blacksquare$  (for picture) or  $\blacktriangleright$  (for sound) on the remote Commander.

or

Press MENU and select »Picture Control« or »Sound Control«, then press OK.  
The PICTURE CONTROL or SOUND CONTROL menu appears. (See Fig. 28 or Fig. 29.)

- 2 Using  $\Delta+$  or  $\nabla-$ , select the item you want to adjust and press OK. The selected item changes colour. (See Fig. 30.)

- 3 Adjust the setting with  $\Delta+$  or  $\nabla-$  and press OK. The cursor appears beside the next item (at the left margin). (See Fig. 31.)

For the effect of each control, see the table below.

- 4 Repeat steps 2 and 3 to adjust other items.

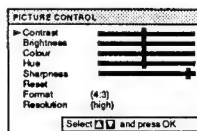


Fig. 28.

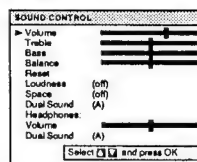


Fig. 29.



Fig. 30.



Fig. 31.

### Effect of each control

PICTURE CONTROL	Effect
Contrast	Less $\longleftarrow$ — $\longrightarrow$ More
Brightness	Darker $\longleftarrow$ — $\longrightarrow$ Brighter
Colour	Less $\longleftarrow$ — $\longrightarrow$ More
Hue	Greenish $\longleftarrow$ — $\longrightarrow$ Reddish
Sharpness	Softer $\longleftarrow$ — $\longrightarrow$ Sharper
Reset	Resets picture to the factory preset levels.
Format	4 : 3 : Normal      16 : 9 : Wide screen effect
Resolution	Normal      high : Obtain a higher quality picture

SOUND CONTROL	Effect
Volume	Less $\longleftarrow$ — $\longrightarrow$ More
Treble	Less $\longleftarrow$ — $\longrightarrow$ More
Bass	Less $\longleftarrow$ — $\longrightarrow$ More
Balance	More left $\longleftarrow$ — $\longrightarrow$ More right
Reset	Resets sound to the factory preset levels.
Loudness	off: Normal      on: When listening to low volume sound.
Space	off: Normal      on: Obtain acoustic sound effect.
Dual Sound	A: left channel      B: right: channel Stereo mono
The selected mode of the A-CD-B Indicator on the TV lights up (for NICAM broadcasts see next page)	

Headphones :

Volume	Less $\longleftarrow$ — $\longrightarrow$ More
Dual Sound	A: left channel      B: right channel      stereo mono

### Selecting Nicam Broadcasts\*

This Sony TV has been designed to select Nicam broadcasts when available. Whenever a Nicam broadcast is received »NICAM« appears briefly on the screen. When the Nicam programme ends, or you switch channels to one without Nicam, the A-CD-B indicators, on the TV will switch off.

Nicam programmes can be broadcast in two ways. You may select the sound you want to hear in either of these by first following the instructions explained on page 16.

Service Being Broadcast	Action	Effect	Indication on the TV A-CD-B
Stereo	Press $\Delta+$ or $\nabla-$	Stereo Nicam (Mono 2-Channel) mono	
Press $\Delta+$ or $\nabla-$ again to return to stereo Nicam (mono 2-channel)			
Bilingual	Press $\Delta+$ or $\nabla-$	Channel A Nicam Channel B Nicam mono	
Press $\Delta+$ or $\nabla-$ again to return to channel A Nicam			

\* Depending on availability of service.

### PROGRAMME TABLE

To go back to the normal TV picture\*  
Press MENU.

## Using the Programme Table

On this table, you can see which channel is preset to which programme position. You can also select programmes using this table.

From the main menu, select »Programme Table« with  $\Delta+$  or  $\nabla-$  and press OK.

The PROGRAMME TABLE menu appears. (See Fig. 32.)

To scroll to higher programme numbers, press  $\Delta-$ .

To select a programme using this menu

Select the programme number with  $\Delta+$  or  $\nabla-$  and press OK. The selected programme appears.

PROGRAMME TABLE
PROG CH LABEL PROG CH LABEL
1 C21 11 C38
2 C24 12 C40
3 C26 13 C41
4 C27 14 C43
5 C23 15 C34
6 C22 16 C35
7 C38 17 C36
8 C38 18 C37
9 C38 19 C46
10 C38 20 C48

Fig. 32.

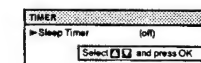


Fig. 33.

### TIMER

To switch off the timer  
Select »OFF« in step 3.

To check the remaining time  
Press  $\blacksquare$ .

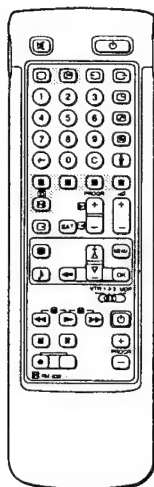
## Using the Sleep Timer

You can select a time period after which the TV automatically switches into standby mode.

- 1 From the main menu, select »Timer« with  $\Delta+$  or  $\nabla-$  and press OK.  
The TIMER menu appears. (See Fig. 33.)
- 2 Press OK.  
The time period option changes colour.
- 3 Select the time period with  $\Delta+$  or  $\nabla-$ .  
The time period (in minutes) changes as follows:  
10  $\rightarrow$  20  $\rightarrow$  30  $\rightarrow$  40  $\rightarrow$  50  $\rightarrow$  60  $\rightarrow$  70  $\rightarrow$  80  $\rightarrow$  90  
 $\uparrow$  OFF  $\downarrow$
- 4 After selecting the time period, press OK.  
The cursor moves back to the left margin and the timer starts counting.  
One minute before the TV switches into standby mode, a message is displayed on the screen.



## 1-7. TELETEXT



**Note**  
Teletext errors may occur if the broadcasting signals are weak.

**With the simple side of the Remote Commander**  
You can switch teletext on and off, operate Fastext, and directly select page numbers.

**Note**  
Fastext operation is only possible, if the TV station broadcasts Fastext signals.

TV stations broadcast an information service called Teletext via the TV channels. Teletext service allows you to receive various information pages such as weather reports or news at any time you want. For advanced teletext operation, use the buttons on the Full-Function side of the Remote Commander.

### Direct Access Functions

#### Switching Teletext on and off

- 1 Select the TV channel which carries the teletext broadcast you want to watch.
- 2 Press **TELE** to switch on teletext.  
A teletext page will be displayed (usually the index page). If there is no teletext broadcast, «No text available» is displayed on the information line at the top of the screen.

#### To switch teletext off

Press **OFF**.

#### Selecting a teletext page

##### With direct page selection

Use the number buttons to input the three digits of the chosen page number.  
If you have made a mistake, type in any three digits. Then re-enter the correct page number.

##### With page-catching

- 1 Select a teletext page with a page overview (e.g. index page).
- 2 Press **PC** twice. «Page catching» will be displayed on the information line. The last digit of the first displayed page number flashes.
- 3 Using **Δ** or **▽**, select the desired page and press **OK**. The requested page will appear in a few seconds.

#### Accessing next or preceding page

Press **PG+** (PAGE+) or **PG-** (PAGE-).  
The next or preceding page appears.

#### Superimposing the teletext display on the TV programme

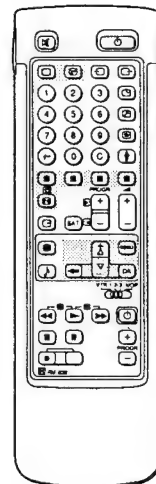
- Press **TELE** once in teletext mode or twice in TV mode.
- Press **TELE** again to resume normal teletext reception.

#### Preventing a teletext page from being updated

- Press **HOLD**. The HOLD symbol «H» is displayed on the information line.
- Press **TELE** to resume normal teletext reception.

#### Using Fastext

With Fastext you can access pages with one key stroke. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons on the Remote Commander.  
Press the corresponding coloured button on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed after a few seconds.



**Note**  
Some of the features may not be available depending on the Teletext service.

**Note on SUBTITLES**  
If the subtitles are not broadcast on page 888, please select the subtitle page using the number buttons.

**To cancel the request**  
Select «OFF» for the TIME PAGE setting.

### Using the Teletext Menu

This TV is provided with a menu-guided teletext system. When teletext is switched in, you can use the menu buttons to operate the teletext menu. Select the teletext menu functions in the following way:

- 1 Press **MENU**. The menu will be superimposed on the teletext display. (See Fig. 34.)
- 2 Using **Δ** or **▽**, select the teletext function you want and press **OK**. (See Fig. 35.)

#### USER PAGES/PRESET USER PAGES

See page 19 for information about presetting and operating the user pages.

#### INDEX

The index will give you an overview of the contents of the teletext and the page numbers.

#### TOP/BOTTOM/FULL

For convenient reading of a teletext page, you can enlarge the teletext display. After having selected the function, an information line TOP/BOTTOM/FULL will be displayed. (See Fig. 36.)

Press **Δ** for «Top» to enlarge the upper half, **▽** for «Bottom» to enlarge the lower one and **OK** for «Full» to resume the normal size.

Press **TELE** to resume normal teletext reception.

#### TEXT CLEAR

After having selected the function, you can watch a TV programme while waiting for a requested teletext page to be displayed. (See Fig. 37.)

Press **TELE** to resume normal teletext reception.

#### SUBTITLES

Your teletext service will inform you if a TV programme is subtitled. After having selected the function the subtitles will be displayed.

#### REVEAL

Sometimes Pages contain concealed information, such as answers to a quiz. The reveal option lets you disclose the information. After having selected the function, an information line «REVEAL ON/OFF» will be displayed. (See Fig. 38.)

Using **Δ** or **▽**, select ON to reveal the information of OFF to conceal it again.

Press **TELE** to resume normal teletext reception.

#### TIME PAGE

Your teletext service will inform you, if a time coded page is available. You may have a page (e.g. an alarm page) displayed at a certain time.

- 1 Press **OK**. Using **Δ** or **▽**, select ON and press **OK**. The TV programme you were watching before you selected TIME PAGE is restored. An information window will be displayed at the bottom of the page.
- 2 To select the desired page, enter three digits for the page number (e.g. 301) using the number buttons.



Fig. 34.



Fig. 35.

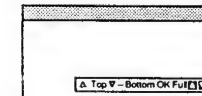


Fig. 36.

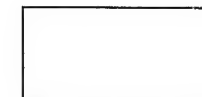


Fig. 37.

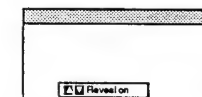


Fig. 38.



To cancel the request  
Select «Subpage»  
and press OK.

If two  
broadcasting  
stations use the  
same Teletext  
You can preset  
one bank to 2  
different  
programme  
positions.

- 3 To select the desired time, enter four digits for the desired time (e.g. 1800) using the number buttons. The selected time is displayed at the top in the left-handed corner. At the requested time, the page will be displayed.

Press to resume normal teletext mode.

### SUBPAGE

You may want to select a particular teletext page from several subpages which are rotated automatically. After having selected the function, an information line will be displayed.

To select the desired subpage, enter four digits using PROGR +/- or the number buttons (e.g. enter 0002 for the second page of a sequence).

## User Page Bank System

You can store up to 30 pages in the «Teletext page bank system». In this way you have quick access to the pages you watch frequently.

### Storing pages

There are 5 «banks» (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (P1 to P6).

- 1 Press (if Teletext is not on already) and MENU to show the TELETEXT MENU display.
- 2 Select PRESET USER PAGES with or and press OK.
- 3 Select the desired bank with or and press OK. The cursor will go to the first position (P1) of the preferred pages.
- 4 Input the three digits of your first preferred page with the number buttons.  
The cursor will go to the second position.
- 5 Repeat step 4 for the other 5 page numbers you want to preset.  
If you do not want to preset all 6 page numbers available, press OK without inserting any number.
- 6 Select «Allocate Bank» with or and press OK.
- 7 Select the programme position for which you have preset pages with or and press OK. (See Fig. 39.).
- 8 Select the desired bank with or (Banks A to E are available) and press OK.
- 9 Repeat steps 3 to 8 for the other 4 banks available.

### Displaying User Pages.

- 1 Select MENU.
- 2 Select USER PAGES with or and press OK.  
A table of the stored preferred pages will be displayed. (See Fig. 40.)
- 3 Select the desired page with or and press OK. The page will be displayed after some seconds.

PRESET USER PAGES						
BANK	P1	P2	P3	P4	P5	P6
A	300	255	456	234	000	179
B	200	120	301	303	550	345
C	100	220	300	444		
D	128	321	255			
E	400	238	240	118	127	

ALLOCATE BANK					
PROG	LABEL	BANK	PROG	LABEL	BANK
00	VHS	-	04	MTV	D
01	ZDF	A	05	SKY	B
02	AFD	C	06	SAT	C

Select **[A]** and press OK

Fig. 39.

USER PAGES												
PAGE												
1	PAGE	300										
2	PAGE	200										
3	PAGE	203										
4	PAGE	500										
5	PAGE	234										
6	PAGE	156										

Fig. 40.

## 1-8. CONNECTING AND OPERATING OPTIONAL EQUIPMENT

### Connecting Optional Equipment

You can connect optional audio-video equipment to this TV such as a VTRs, video disc player, and stereo system.

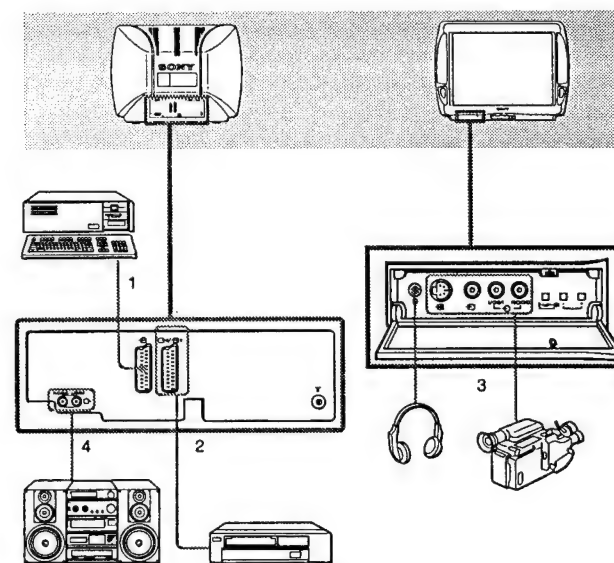
To connect a VTR using the terminal  
Connect the serial output of the VTR to the aerial terminal of the TV.

We recommend that you tune in the video signal to programme number «0». For details see «Preset channels manually» on page 8.

If the picture or the sound is distorted  
Move the VTR away from the TV.

S video Input (V/C Input)  
Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals.  
Separating the Y and C signals prevents them from interfering with one another, and therefore improves picture quality (especially luminance).  
This TV is equipped with 2 S Video input jacks through which these separated signals can be input directly.

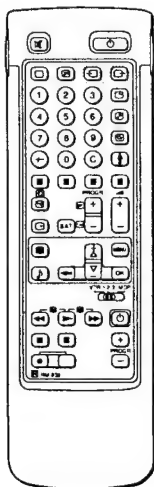
When connecting a monaural VTR  
Connect only the white jack to both the TV and VTR.



Acceptable input signal	Available output signal
1 Normal audio/video and RGB signal	Video/audio from TV tuner
2 Normal audio/video and S video signal	Video/audio from selected source
3 Normal audio/video and S video signal	No outputs
4 No inputs	Audio signal (variable)



**Selecting input with PROGR +/- or number buttons**  
You can preset video input sources to the programme positions so that you can select them with PROGR +/- or number buttons. For details, see "Preset channels manually" on page 8.



## Selecting input and output

This section explains how to view the video input picture (of a video source connected to your TV), and how to select the output signal using direct access buttons or the menu system.

### Selecting input

Press repeatedly to select the input source.

The symbol of the selected input source will appear.

To go back to the normal TV picture

Press .

### Input modes

Symbol	Input signal
	Audio/video input through the  1 connector
	RGB input through the  1 connector
	Audio/video input through the  2/  2 connector
	S video input through the  2/  2 connector
	Audio/video input through  3 and  3 on the front
	S video input through the  3 connectors on the front (4-pin connector)

You can also select the input mode using the and buttons on the TV. In this case, first select , and then press buttons to select the input.

### Selecting the output

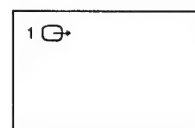
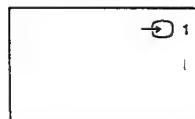
The 2/ 2 connector outputs the source input from the other connectors.

Press repeatedly to select the output.

The symbol of the selected output source appears.

### Output modes

Symbol	2/  2 connector outputs
1	The audio/video signal from the  1 connector
2	The audio/video signal from the  2/  2 connector
3	The audio/S video signal from the  2/  2 connector
3	The audio/video signal from the  3 and  3 connectors
3	The audio/S video signal from the  3 and  3 connectors
TV	The audio/video signal from the "I" aerial terminal



### Checking and selecting the input and output sources using the menu

You can display the menu to see which input sources are selected for the TV screen, and which output source is selected. You can also select them on the menu display.

- 1 Select «Video Connection» with or and press OK. The VIDEO CONNECTION menu appears. (See Fig. 41.) You can see which source is selected for the TV input and for the output. If you want to select the input and output on this menu, go on to the next step.
- 2 Select TV screen (input source for the TV screen), or Output (output source) with or and press OK. One of the source items changes colour. (See Fig. 42.)
- 3 Select the desired source with or . (See Fig. 43.) For details about each source, see the table on page 21.
- 4 Press OK. The selected source is confirmed, and the cursor appears. (See Fig. 44.)
- 5 Repeat steps 2 to 4 to select the source for other inputs or outputs.

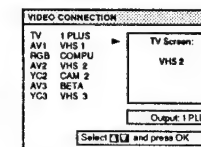


Fig. 41.

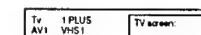


Fig. 42.

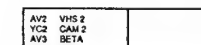


Fig. 43.

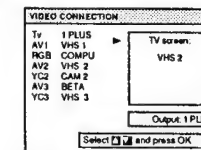


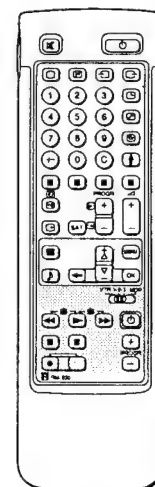
Fig. 44.

## Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most of Sony remote-controlled video equipment such as: Beta, 8 mm or VHS VTRs or video disc players.

### Tuning the Remote Commander to Sony equipment

- 1 Set the VTR 1/2/3 MDP selector according to the equipment you want to control:  
VTR 1: Beta or ED Beta VTR  
VTR 2: 8 mm VTR  
VTR 3: VHS VTR  
MDP : Video disc player
- 2 Use the buttons indicated in the Illustration to operate the additional equipment.  
If your video equipment is furnished with a COMMAND MODE selector, set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.  
If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

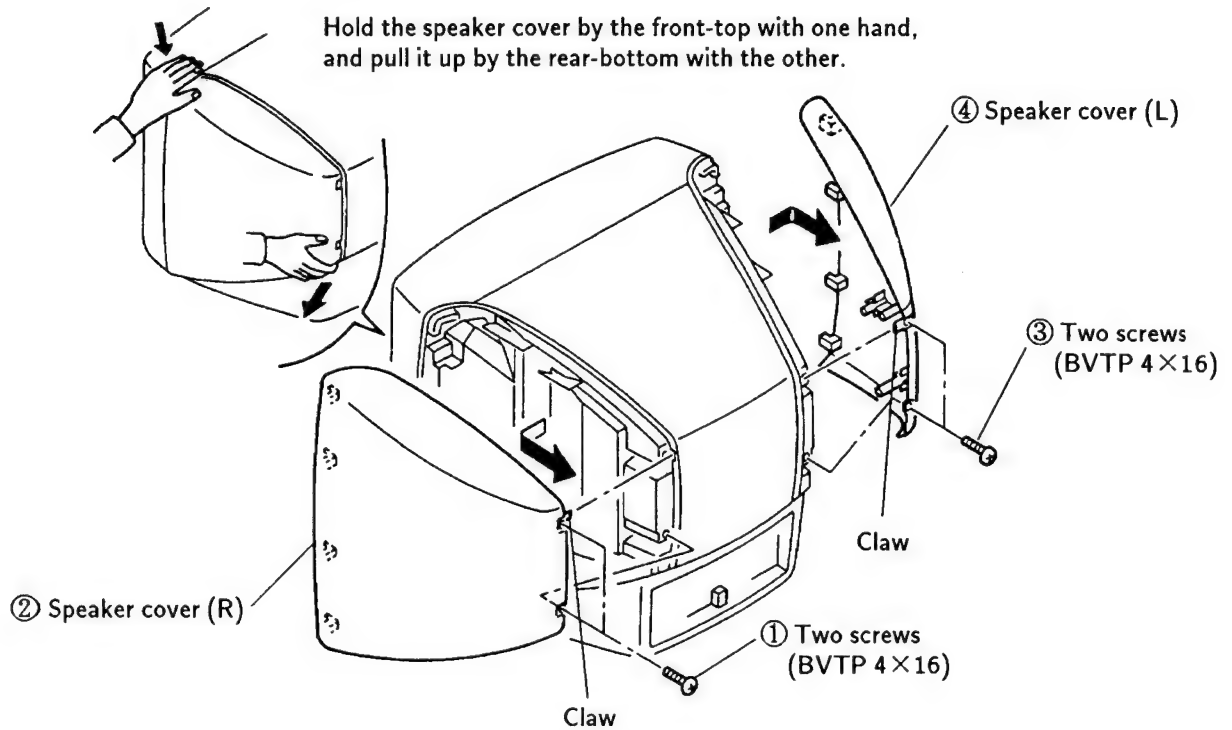


When recording when you use the (record) button, make sure to press this button and the one to the right of it simultaneously.

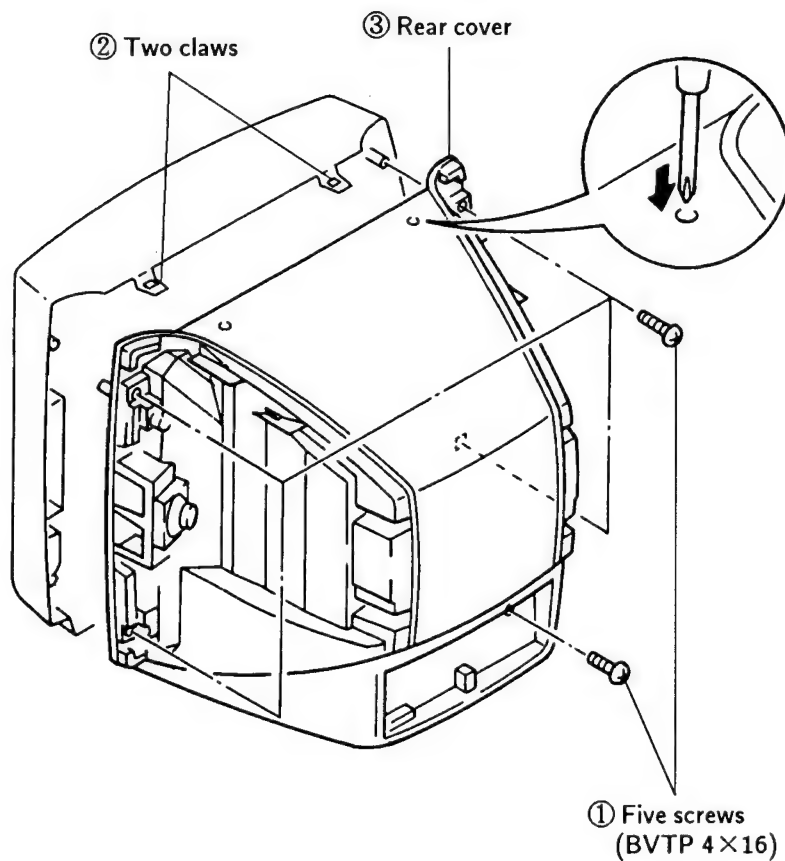


## SECTION 2 DISASSEMBLY

### 2-1. SPEAKER COVER REMOVAL

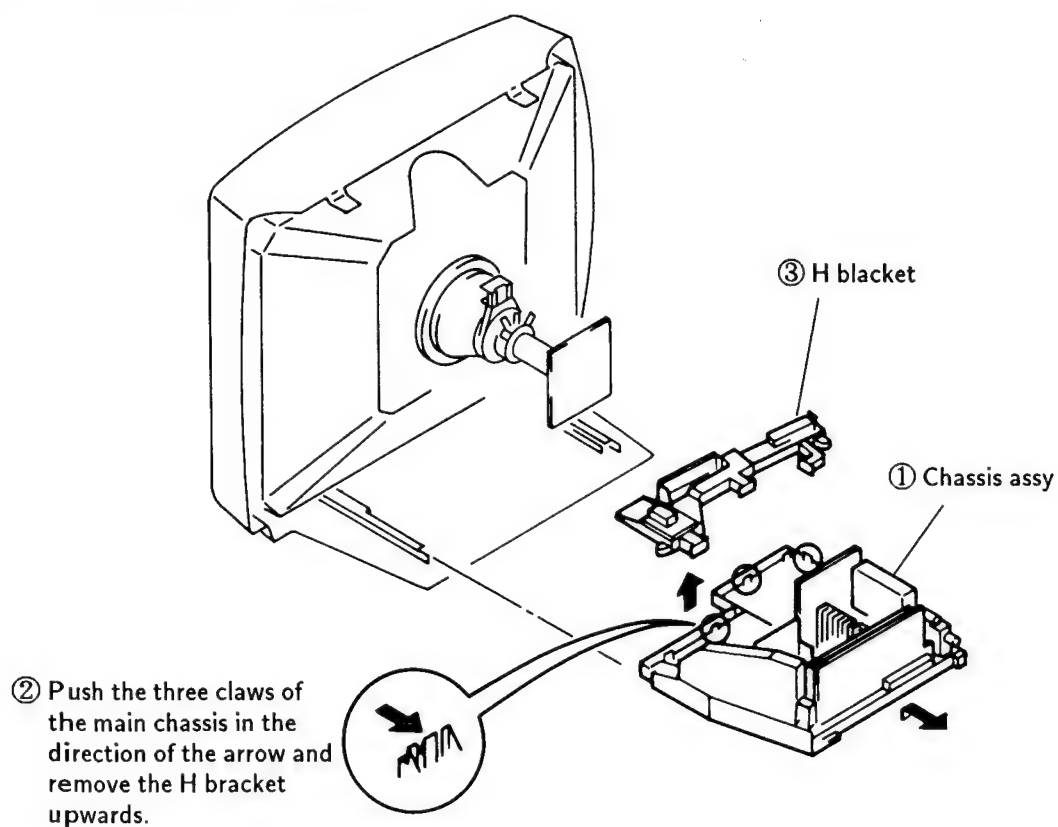


### 2-2. REAR COVER REMOVAL

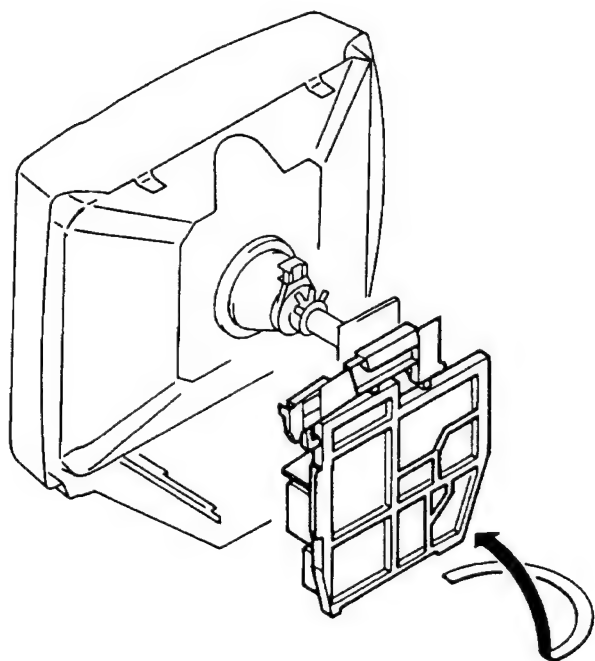




## 2-3. CHASSIS ASSY REMOVAL

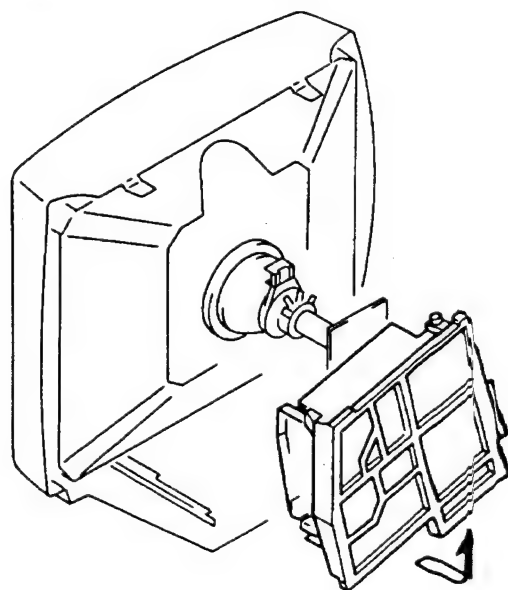


## 2-4. SERVICE POSITION (1)



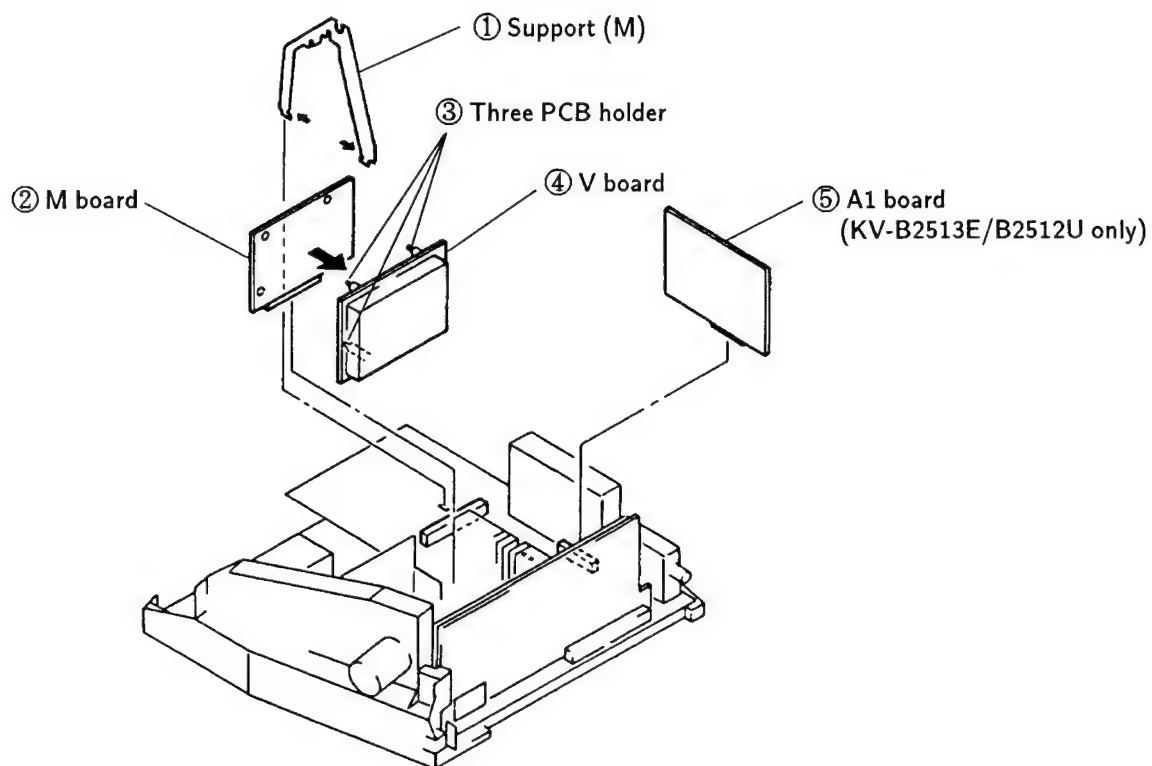
## SERVICE POSITION (2)

※ Remove the H bracket from the chassis assy and then perform the following servicing.  
(Refer to 2-3. CHASSIS ASSY REMOVAL)

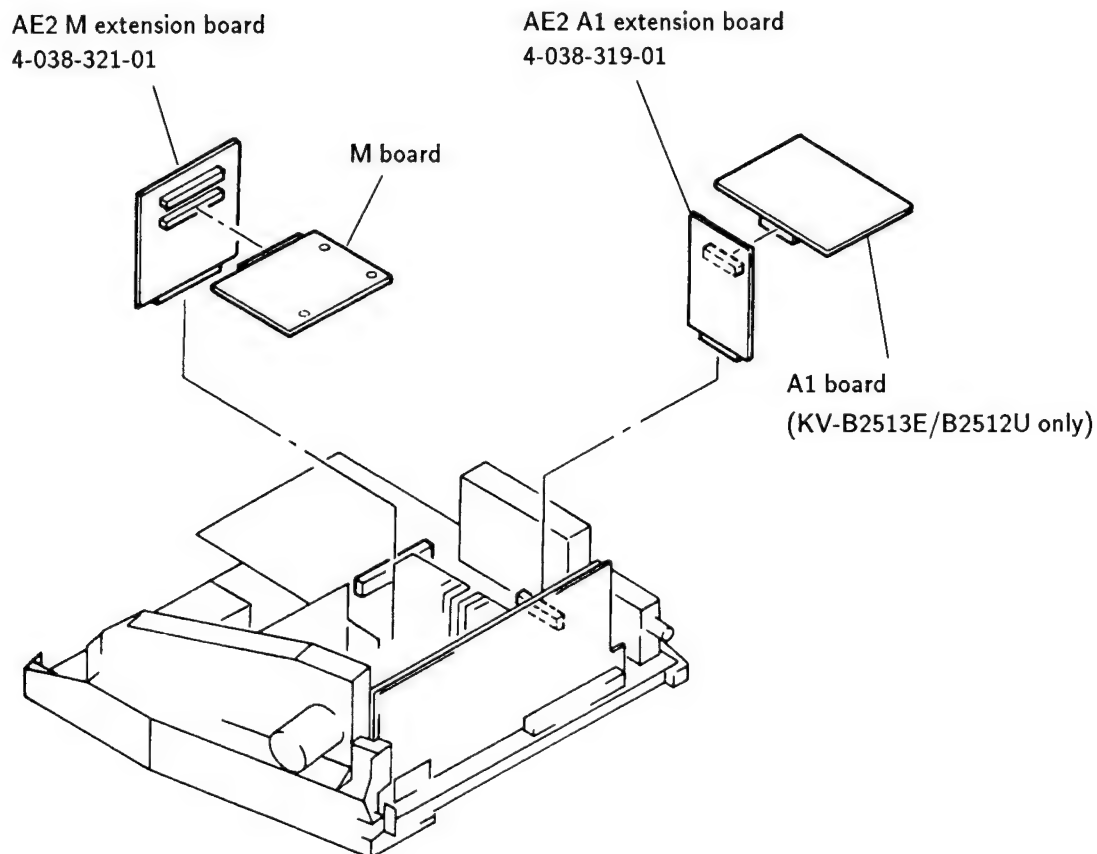




## 2-5. M, V AND A 1 BOARDS REMOVAL

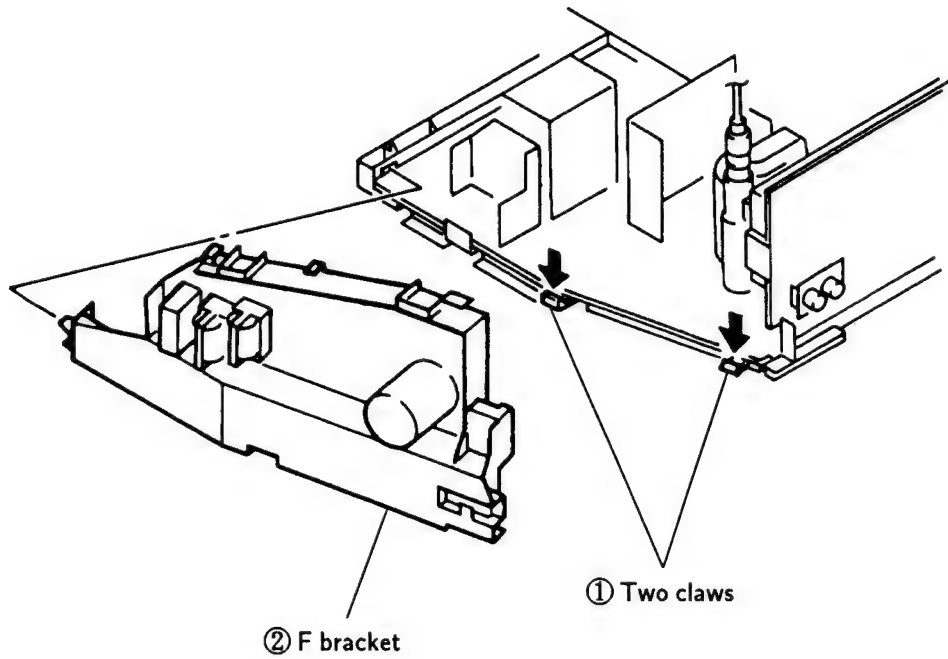


## 2-6. EXTENSION BOARD

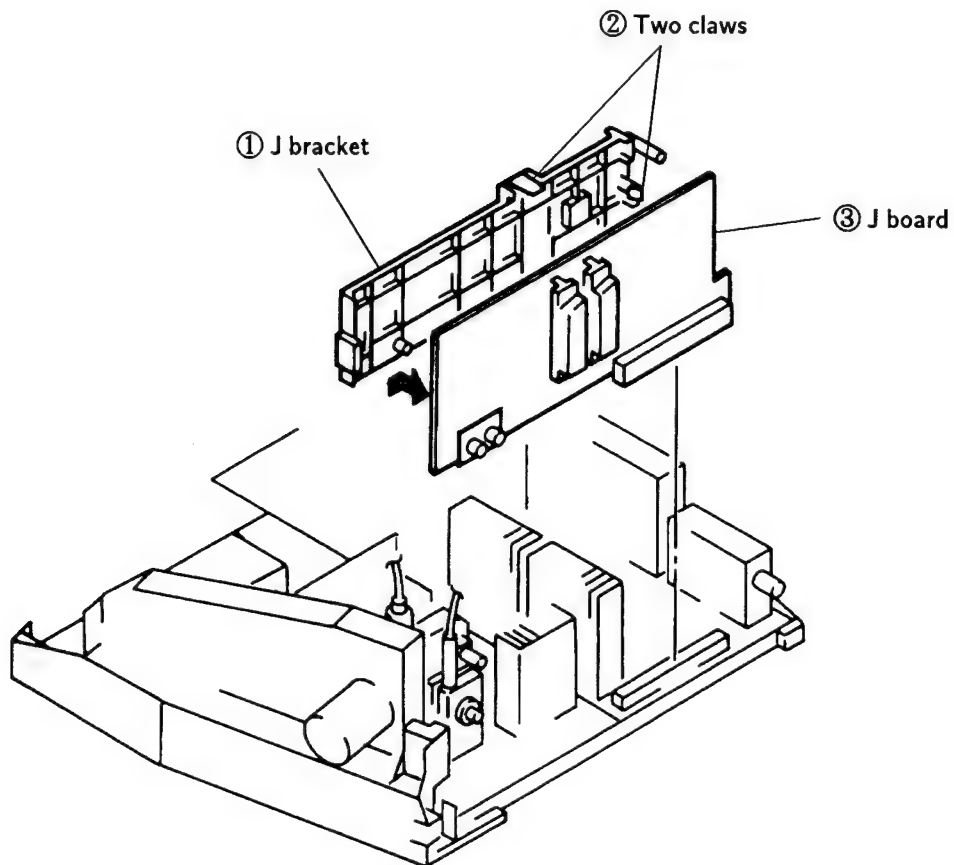




## 2-7. F BRACKET REMOVAL



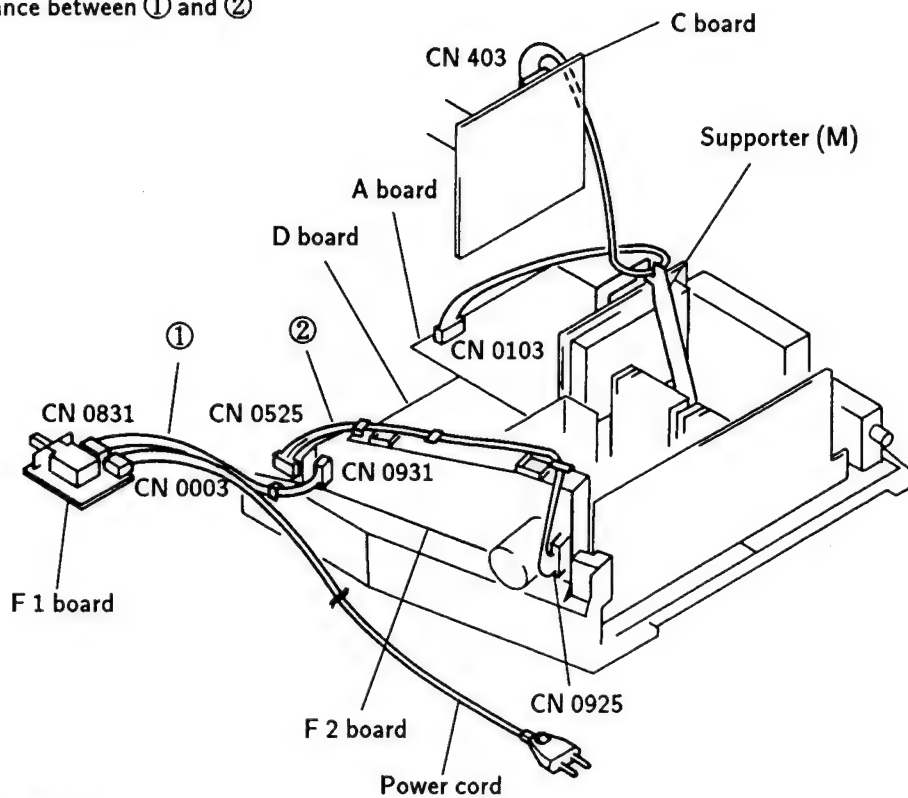
## 2-8. J BOARD REMOVAL



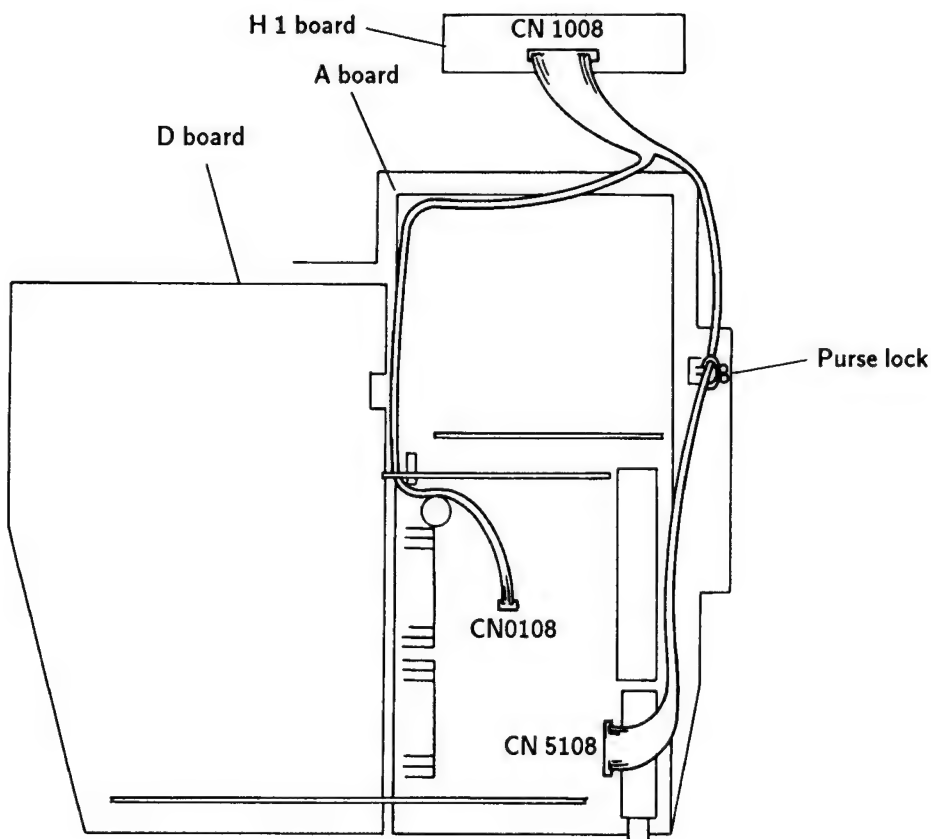


## 2-9-1. WIRE ROD

※ Keep distance between ① and ②

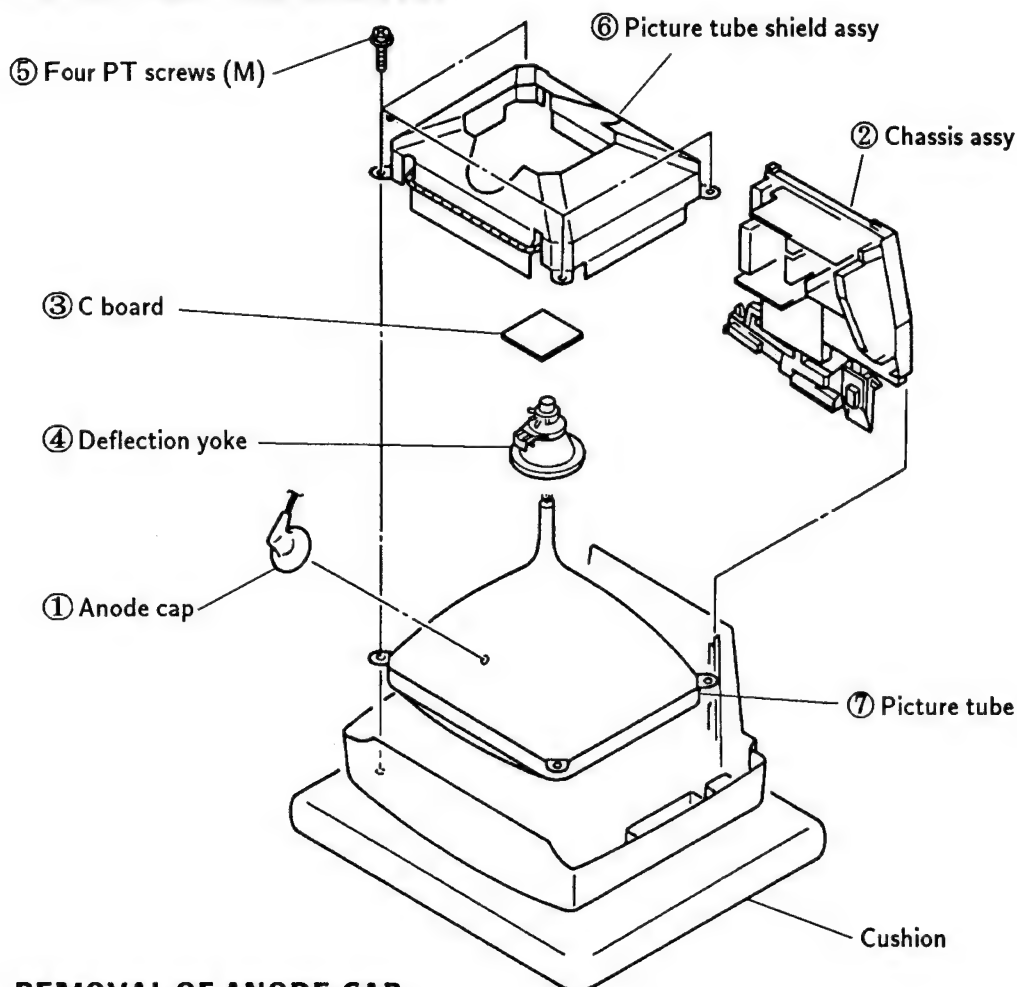


## 2-9-2. WIRE ROD





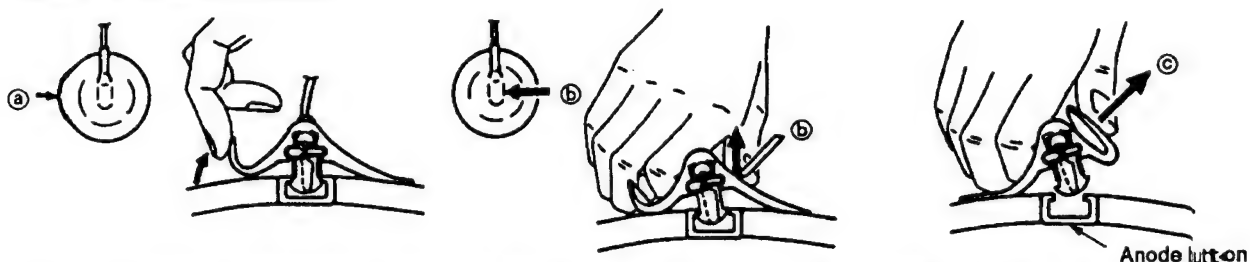
## 2-10. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

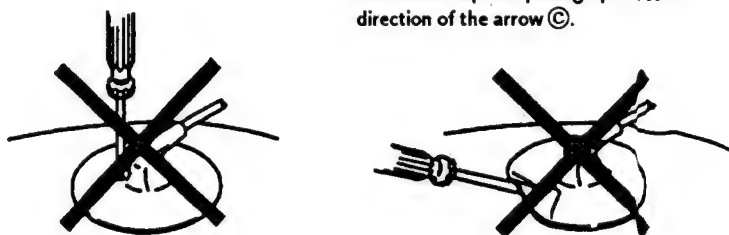
NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon painted on the CRT, after removing the anode.

### • REMOVING PROCEDURES



### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!  
A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly!  
The shatter-hook terminal will stick out or hurt the rubber.





## SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there is specific instruction to the contrary, carry out these adjustments with the rated power supply.
- Unless there is specific instruction to the contrary, set the controls and switches this way :

⦿ Contrast ..... 80% (or remote control normal)

⚙ Brightness ..... 50%

### Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
 

Contrast } normal  
 Brightness }
2. Position neck assy as shown in Fig.3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side. (See Fig.3-1 - 3-3)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Fig.3-1)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig.3-4)

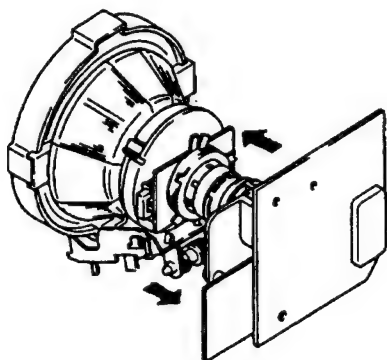


Fig.3-1

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. White balance

**Note:** Testing equipment required.

1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

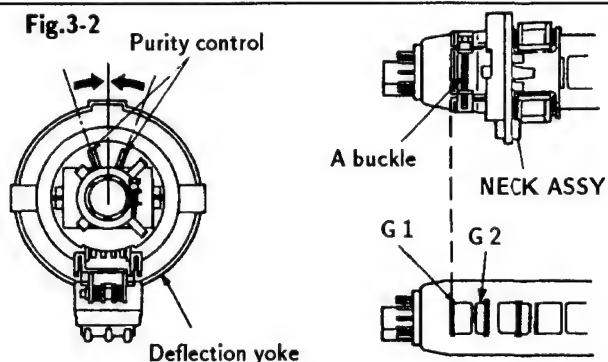


Fig.3-3

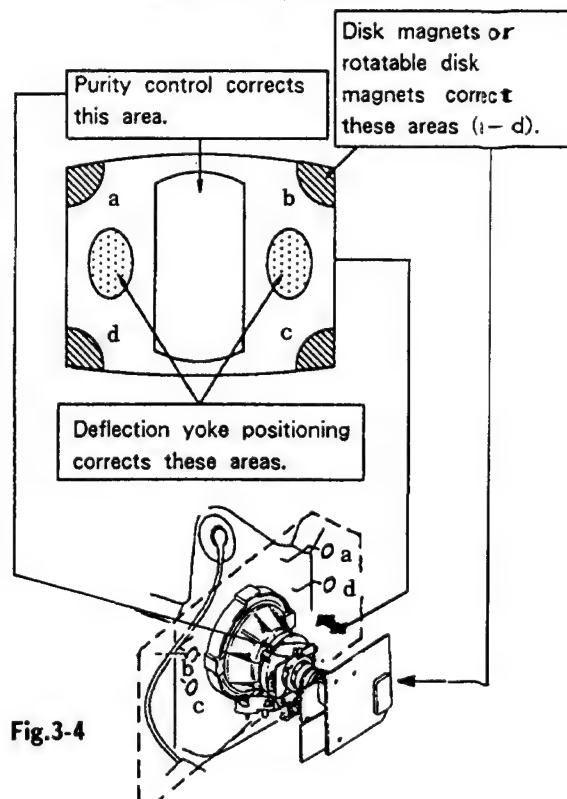
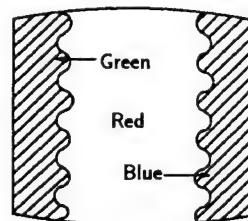


Fig.3-4

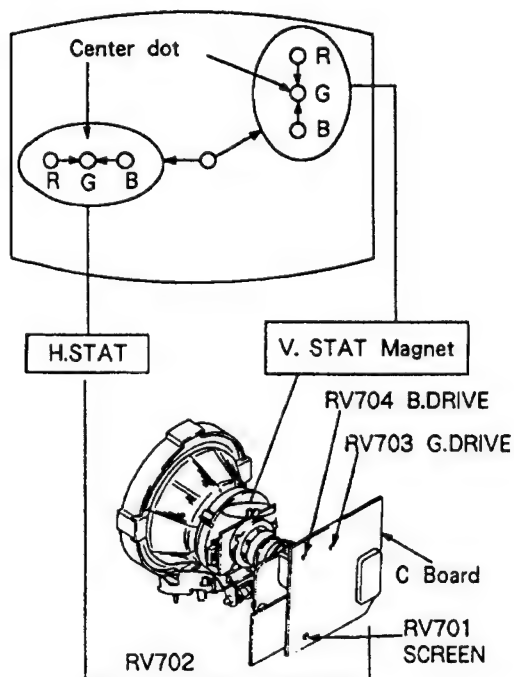


### 3-2. CONVERGENCE

#### Preparations :

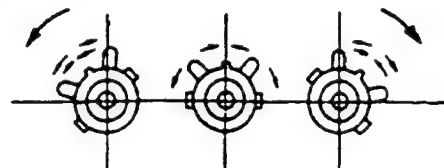
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

#### (1) Horizontal and vertical static convergence

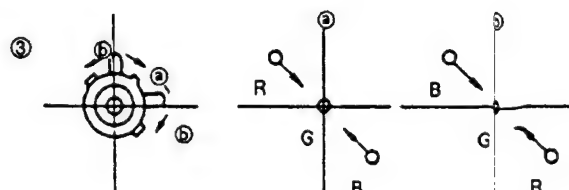
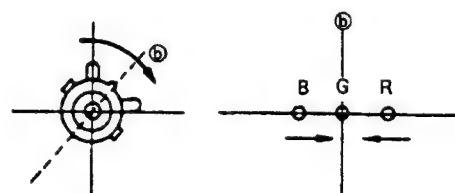
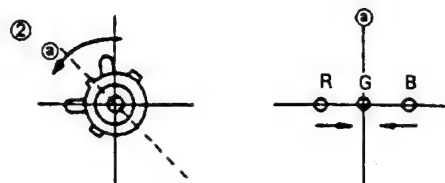
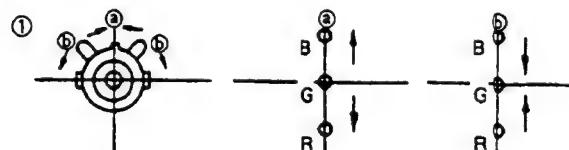


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V. STAT magnet influence each other)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

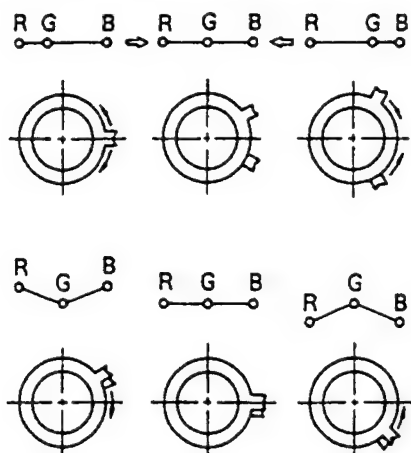


4. If the V.STAT magnet is moved in the direction of the ② and ③ arrows, the red, green, and blue points move as shown below.



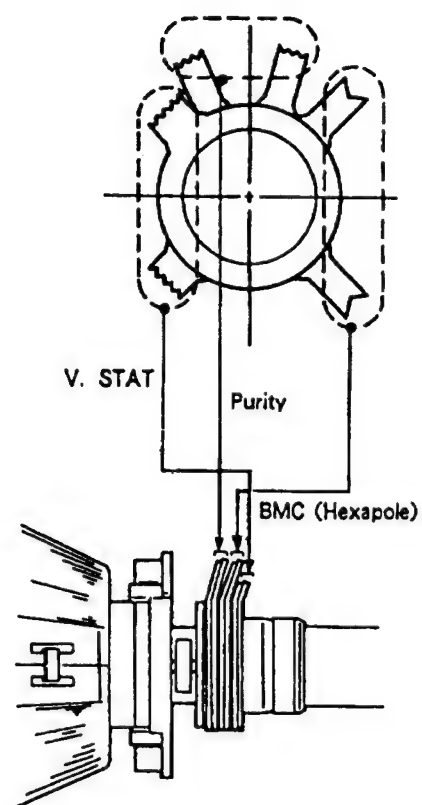


- Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.

Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

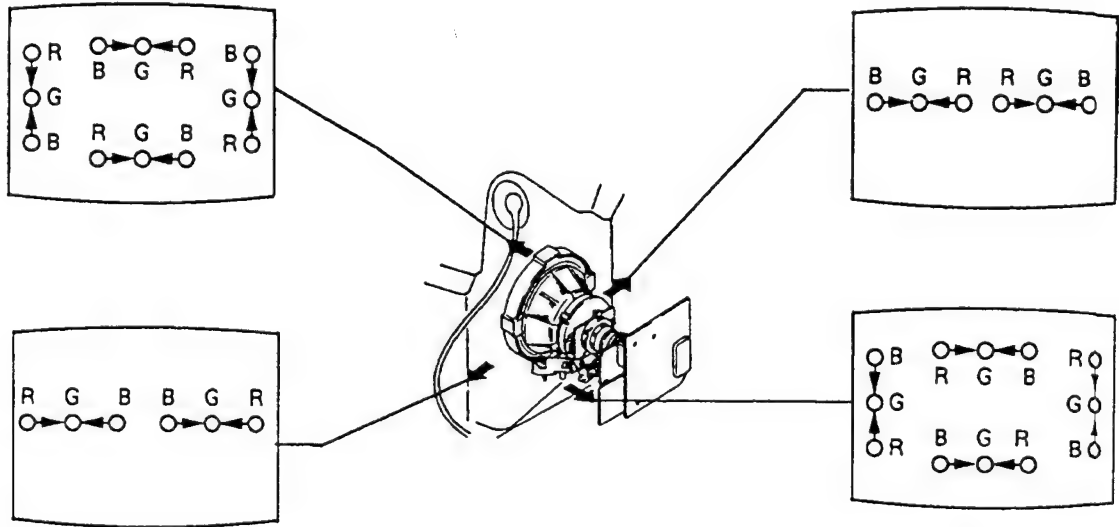




**(2) Dynamic convergence adjustment****Preparations :**

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

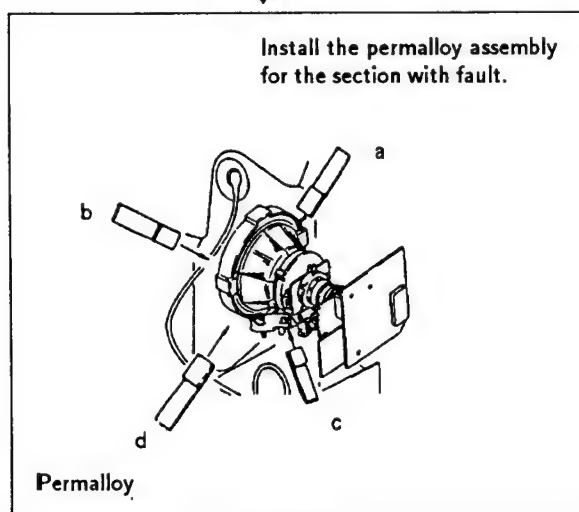
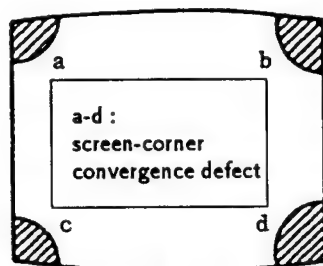
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.



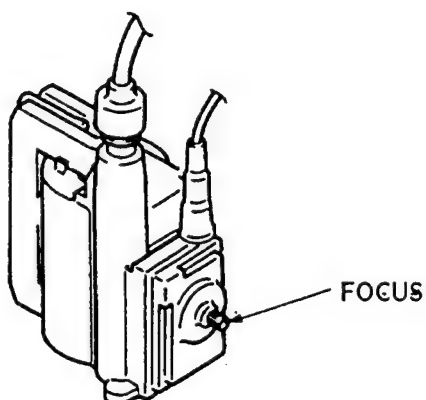


**(3) Screen corner convergence**

If you cannot adjust corner convergence properly, correct them with permalloy.

**3-3. FOCUS**

Adjust the focus to optimize the screen.

**3-4. WHITE BALANCE****Screen G2 Setting**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R,G, and B cathodes with an external power supply.
4. While watching the picture, adjust G 2 control RV 701 (Screen) to the point just before the return lines disappear.

**White balance adjustment**

1. Receive all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" to how to enter service mode.)
3. Select CXA1587S on menu.

**CXA1587S**

Item No.	Adjustment item	Data amount
09	SUB BRIGHT	ADJ.
10	SUB HUE	8
11	VM LEVEL	2
12	NR LEVEL	0
13	ABL MODE	0
14	G-DRIVE	ADJ.
15	B-DRIVE	ADJ.
16	G-AUTO CUT OFF	ADJ.
17	B-AUTO CUT OFF	ADJ.
18	R-MANUAL CUT OFF	ADJ.
19	G-MANUAL CUT OFF	ADJ.
20	B-MANUAL CUT OFF	ADJ.

4. Set picture to MAX.
5. Adjust G-DRIVE B-DRIVE with buttons so that the white balance becomes optimum.
6. Press button to write the data for each item.
7. Set picture to MIN.
8. Adjust G-AUTO CUT OFF, B-AUTO CUT OFF, R-MANUAL CUT OFF, G-MANUAL CUT OFF and B-MANUAL CUT OFF with buttons so that the white balance becomes optimum.
9. Press button to write the data for each item.



## SECTION 4 CIRCUIT ADJUSTMENTS

### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander, RM-830.

#### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set while pressing any two buttons on the front panel.

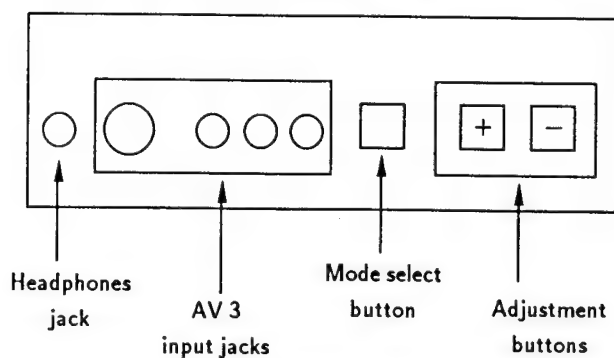


Fig.4-1

2. "TT" will appear on the upper right corner of the screen.

Command operation in service mode

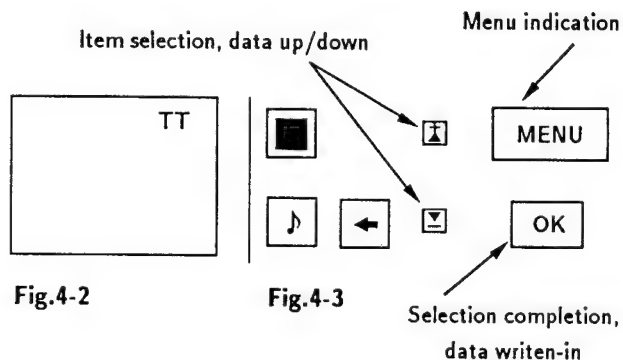


Fig.4-2

Fig.4-3

3. Press the **MENU** button of the commander to get the menu on screen.

MAIN MENU	
Programme Table	
Video Connection	
Timer	
Preset	
Picture Control	
Sound Control	
Language	
> DEMO	
Select   and press OK	

Fig.4-4

4. Press the and buttons of the commander and move > to DEMO.
5. Press **OK** button to proceed to the next menu.
6. The menu of fig.4-5 will appear on screen. Select DEVICE corresponding to the adjustment item from the table on next page.

DEVICES	
Initialize	
> CXA 1587 S	
CXD 2018	
TDA 9145	
CXA 1526	
TDA 6612	
CX 7948 A	
P/P SERVICE	
Select   and press OK	

Fig.4-5

7. If adjustment item is CXA 1587 S, press the button and move > to CXA 1587 S.
8. Press **OK** button to get the next selection menu.

#### CXA 1587 S

Item No.	Adjustment item	Data Amount
01	PICTURE	53
02	COLOR	31
03	BRIGHT	31
04	HUE	31
05	SHARPNESS	7
06	RGB PICTURE	10
07	SUB CONTRAST	8
08	SUB COLOR	8
09	SUB BRIGHT	31
10	SUB HUE	8
11	VM LEVEL	2
12	NR LEVEL	0
13	ABL MODE	0
14	G-DRIVE	32
15	B-DRIVE	32

9. Press button and move > to the adjustment item and press **OK** button.
10. Press the and buttons to change the data in order to comply each standard.
11. Press **OK** button to write data.
12. Turn off the power to quit service mode when completing the adjustment.



## CXA1587S

Item No.	Adjustment item	Data Amount
01	PICTURE	53
02	COLOR	31
03	BRIGHT	31
04	HUE	31
05	SHARPNESS	7
06	RGB PICTURE	10
07	SUB CONTRAST	8
08	SUB COLOR	ADJ.
09	SUB BRIGHT	ADJ.
10	SUB HUE	8
11	VM LEVEL	2
12	NR LEVEL	0
13	ABL MODE	0
14	G-DRIVE	ADJ.
15	B-DRIVE	ADJ.
16	G-AUTO CUT OFF	ADJ.
17	B-AUTO CUT OFF	ADJ.
18	R-MANUAL CUT OFF	ADJ.
19	G-MANUAL CUT OFF	ADJ.
20	B-MANUAL CUT OFF	ADJ.
21	GAMMA LEVEL	0
22	DC TRANSFER RATIO	0
23	DYNAMIC PICTURE	0
24	Y FILTER ADJ	ADJ.
25	Y DELAY TIME	15
26	Y DELAY SWITCH 1	OFF
27	Y DELAY SWITCH 2	ON
28	SHARPNESS LIMIT	ON
29	ALL BLK	OFF
30	H SHIFT	32
31	DAC TEST	AUTO
32	PRE/OVER SHOOT	8
33	SHARPNESS FO	2
34	SUB SHARPNESS	3
35	R MUTE	OFF
36	G MUTE	OFF
37	B MUTE	OFF

38	AGING 1	OFF
39	AGING 2	AUTO
40	AKB OFF	ON
41	INHIBIT RGB	OFF
42	FORCED RGB	AUTO
43	V/2 V	ON
44	AXIS	AUTO
45	HUE SW	OFF
46	V EXTENTION	OFF
47	AFC 1	ON
48	AFC 2	OFF
49	AFC OFF	ON
50	REF.POSITION	OFF

## CXD 2018

Item No.	Adjustment item	Data Amount
01	V SIZE	ADJ.
02	V SHIFT	ADJ.
03	S CORRECTION	ADJ.
04	V LINEARITY	ADJ.
05	H SIZE	ADJ.
06	PIN AMP	ADJ.
07	TILT	ADJ.
08	UPPER CORNER	ADJ.
09	LOWER CORNER	ADJ.
10	V BOW	ADJ.
11	ANGLE	ADJ.
12	HV COMP.V	15
13	HV COMP.H	8
14	FRAME SHIFT	OFF
15	FREE RUN 60 Hz	OFF
16	SYSTEM 60 Hz	OFF
17	ASPECT WIDE	OFF
18	DOUBLE SCAN	OFF
19	NON INTERLACE	OFF
20	H SHIFT	ADJ.
21	N/S CORRECTION	ADJ.

Typical Value (OSD based)when receiving PAL Philips pattern.

## TDA 6612

Adjustment item	Data Amount
Stereo-Separation	30

Should be adjusted twice 4 : 3 and 16 : 9 mode.



**Y FILTER ADJUSTMENT**

1. Input PAL RED pattern.
2. Connect an oscilloscope to CN 0403 ① pin (R OUT) on the C board.
3. Enter into service mode and press 3, 8.
4. Adjust data by  $\triangle$  or  $\nabla$  to minimize the chroma element of CN 0403 ① pin.

**SUB BRIGHTNESS ADJUSTMENT**

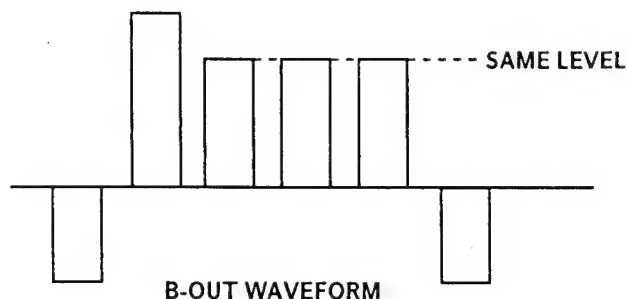
1. Input Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of the grey scale and CUT -OFF 20-IRE glitter slightly.

**SUB CONTRAST ADJUSTMENT**

1. Input a video that contains small 100% area on the Black Back ground.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Adjust data so that 2.5 Vp-p can be obtained at ① CN 0403 (R out).

**SUB COLOR ADJUSTMENT**

1. Input PAL color bar.
2. Connect an oscilloscope to CN 0403 ③ pin (B OUT) on the C board.
3. Enter into service mode and press 22 of CXA 1587 S, 8 SUB COLOR.
4. Adjust data so that the right sides of the waveform will be the same.

**STEREO-SEPARATION ADJUSTMENT**

1. Input 1 kHz stereo signal to the L-ch and 400 Hz stereo signal to the R-ch.
2. Enter into service mode and press 19.
3. Adjust data so that sound does not leak to the R-ch and the L-ch.

**DRIVE AND CUT OFF**

See direct test mode list attached and refer to sub brightness or such for adjustment method.

**DE**

1. E
- 2.



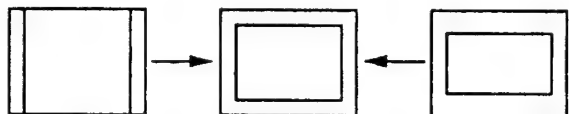
## DEFLECTION SYSTEM ADJUSTMENT

1. Enter into service mode and select CXD 2018.
2. Select and adjust each item in order to get an optimum image.

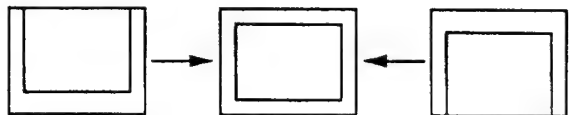
## CXD 2018

Item No.	Adjustment item	Data Amount
01	V SIZE	ADJ.
02	V SHIFT	ADJ.
03	S CORRECTION	ADJ.
04	V LINEARITY	ADJ.
05	H SIZE	ADJ.
06	PIN AMP	ADJ.
07	TILT	ADJ.
08	UPPER CORNER	ADJ.
09	LOWER CORNER	ADJ.
10	V BOW	ADJ.
11	ANGLE	ADJ.
12	HV COMP.V	13
13	HV COMP.H	8
14	FRAME SHIFT	OFF
15	FREE RUN 60 Hz	OFF
16	SYSTEM 60 Hz	OFF
17	ASPECT WIDE	OFF
18	DOUBLE SCAM	OFF
19	NON INTERLACE	ON
20	H SHIFT	32
21	N/S CORRECTION	ADJ.

## V SIZE



## V SHIFT



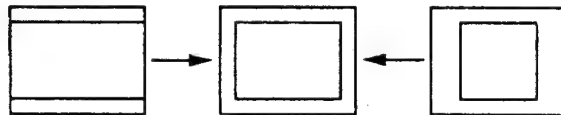
## S CORRECTION



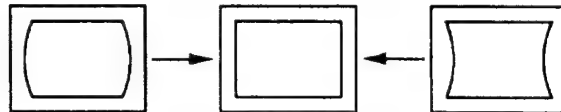
## V LINEARITY



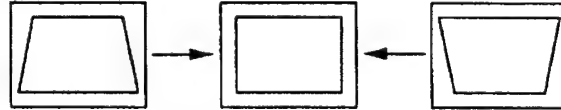
## H SIZE



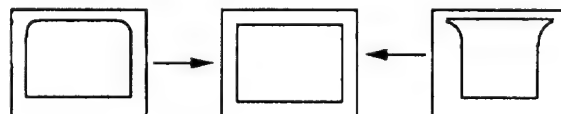
## PIN AMP



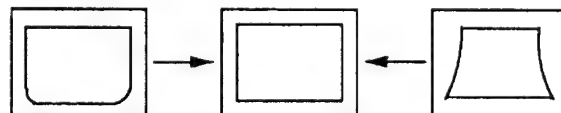
## TILT



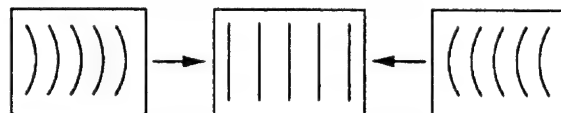
## UPPER CORNER PIN



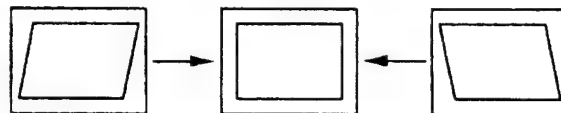
## LOWER CORNER PIN



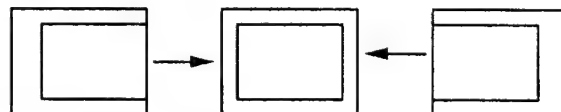
## V BOW



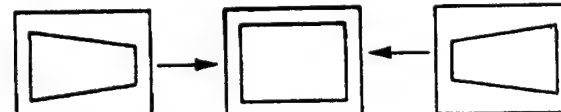
## ANGLE



## H SHIFT



## N/S CORRECTION



3. Press **OK** button to write the data.

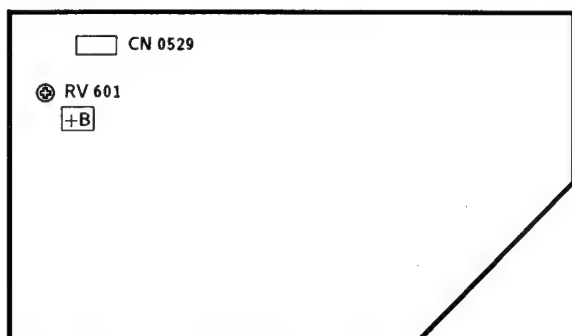
If menu display may disturb the adjustment press **✕** to clear, to resume it, press **✕** again.



## 4-2. VOLUME ELECTRICAL ADJUSTMENTS

### +B (+135 V) ADJUSTMENT (RV 601)

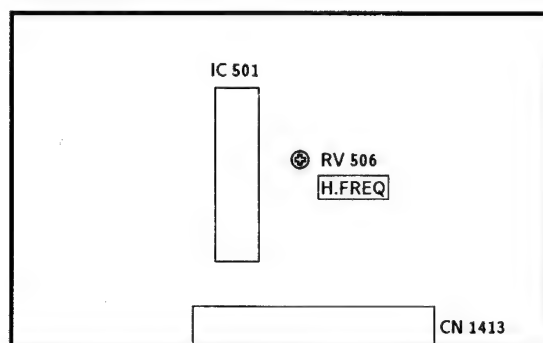
#### D BOARD



1. Turn on the power of the TV set.
2. Connect a digital multi-meter to ① pin of CN 0529 on D board.
3. Adjust RV 601 on D board to  $+135 \pm 0.5$  V.

### H.FREQ ADJUSTMENT (RV 506)

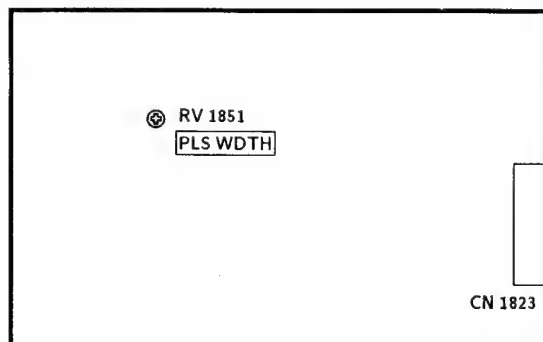
#### M BOARD



1. Connect GND to ⑫ pin of IC 501 on M board.
2. Connect a frequency counter to ④ pin of IC 501.
3. Adjust RV 506 on M board to  $15,625 \text{ kHz} \pm 10 \text{ Hz}$ .
4. Remove ⑫ pin of IC 501 from GND.

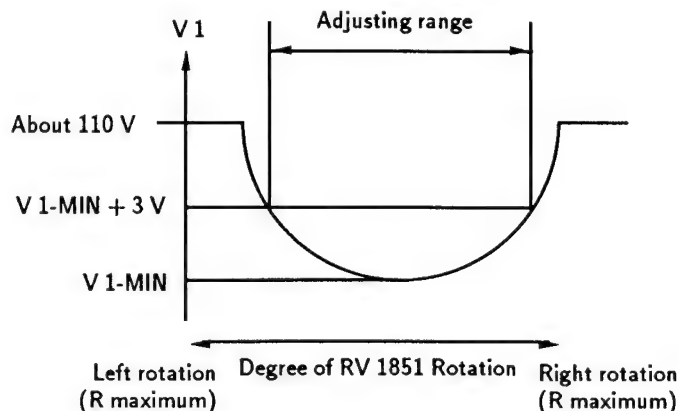
### PLS WDTN

#### D 2 BOARD



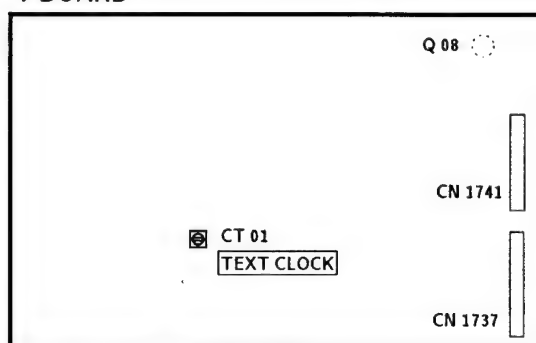
### DRIVE PULSE PHASE ADJUSTMENT (RV 1851)

- 1) While measuring the voltage V 1 at both edges of C 1859, rotate RV 1851 so that it becomes minimum. The adjusting range is from (the voltage at which V 1 becomes minimum) V 1 MIN to 3 V, which means, adjust to between V 1 MIN to V 1 MIN + 3 V.



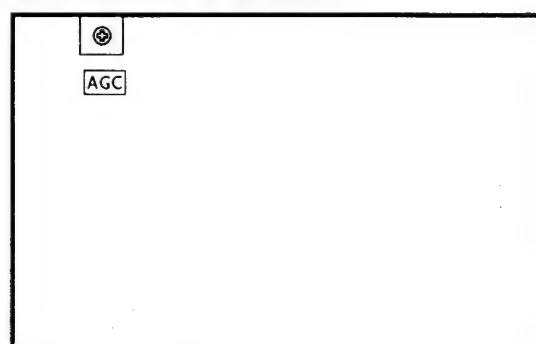
### TEXT CLOCK ADJUSTMENT (CT 01)

#### V BOARD



1. Get TEXT MENU on screen.
2. Connect GND and the base of Q 08 on V board.
3. Adjust CT 01 on V board so that the MENU stands still as much as possible.

### AGC ADJUSTMENT (IF BLOCK)



1. Receive off-air signal.
2. Adjust AGC VR so that there is no snow noise and cross-modulation.
3. Change receiving channel and confirm status.



### 4-3. TEST MODE 2 :

Is available by pressing Test button two times, OSD "TT" appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press two times 0, or switch TV in Standby Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Aging Condition (Volumin., Picture max., Brightness max., Aging 2 Mode of CXA 1587 S, TDA 2595 is locked to CXA 1587S via PIN 34 of $\mu$ -Con.)
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	dummy
10	Tenth entry is deleted
11	Balance
12	Hue
13-14	dummy
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM
17	Preset Level for AV Sources
18	dummy
19	Stereo Separation
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24-29	dummy

30	Tenth entry is deleted
31	Green Drive
32	Blue Drive
33	Green Cut Off (Auto Cut Off)
34	Blue Cut Off (Auto Cut Off)
35	Red Cut Off (Manual Cut Off) (Auto Cut Off is switched off)
36	Green Cut Off (Manual Cut Off) (Auto Cut Off is switched off)
37	Blue Cut Off (Manual Cut Off) (Auto Cut Off is switched off)
38	Y-Filter adjustment (Trap is switched off and TDA 9145 is switched in forced NTSC Mode)
39	dummy
40	Tenth entry is deleted
41	Default setting of CXA 1587S (Only in Plog 99 available)
42	Default setting of CXA 2018 (Only in Plog 99 available)
43	Default setting of CXA 1526 (Only in Plog 99 available)
44	(all Port High) Not yet
45	(all Port High) Not yet
46-48	dummy
49	Erease the NVM Testbyte (this byte detects already stored NMV's) After selecting this function, switch TV Off and On → the NVM will be preset by $\mu$ -Controller. (Not the channel data)

Note: For No. 35, 36, 37 and 38 special pressing (AKB, forced Color Mode, Trap) is selected. After selecting a new Test Mode Number, the AKB is switched ON, the Trap is switched On and TDA 9145 is switched to Auto Search Mode.

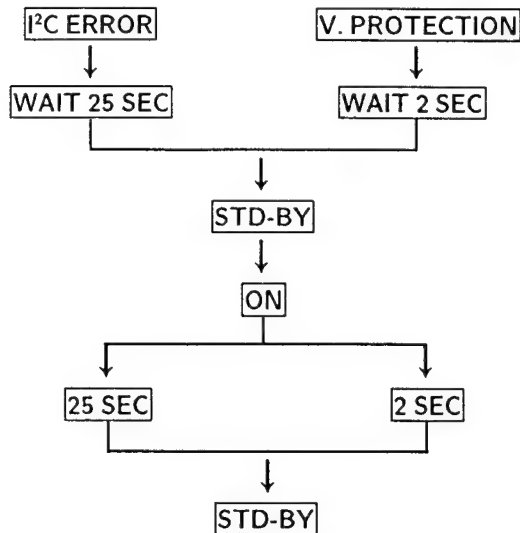
In Test Mode 2 the Menu display is switchable by Speaker-Off button.



#### 4-4. ERROR MESSAGE

Self diagnosis system can operate as follows.

- When MP can't get the acknowledge back from the device, LED starts flashing according to the table as attached.



In case of more errors in parallel, the blinking error shows max. Priority according to the error number (e.g. error 2 and error 5 appears together, then LEDs show error 2) .

TABLE OF ERRORS

ERROR COUNT	IC TYPE	FUNCTION
1	I <sup>2</sup> C BUS	SDA low
2	X 24 C 16	EEPROM
3	SDA 3202	Tuner PII
4	TDA 9145	Colour decoder
5	CXA 1587S	RGB/Jungle
6	TDA 6612	Sound processor
7	CXD 2018	V deflection
8	CXA 1545	AV switch
11	SDA 5248	Text
13		V protection

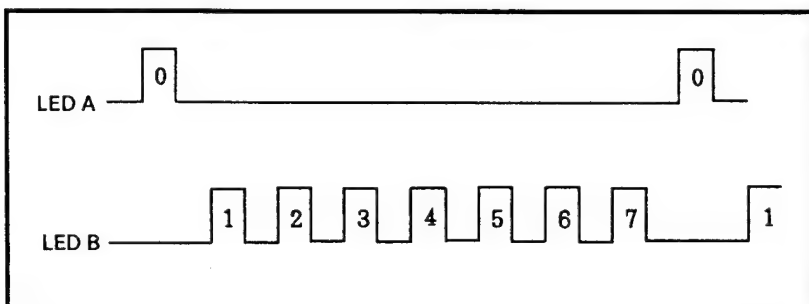
Stand by LED blinking

No IK return

#### 4-5. ERROR I<sup>2</sup>C BUS DIAGNOSIS SYSTEM IN AE 2 CHASSIS

For all ICs in AE2 chassis which are necessary to get picture and sound there is a built in error I<sup>2</sup>C Bus diagnosis system.

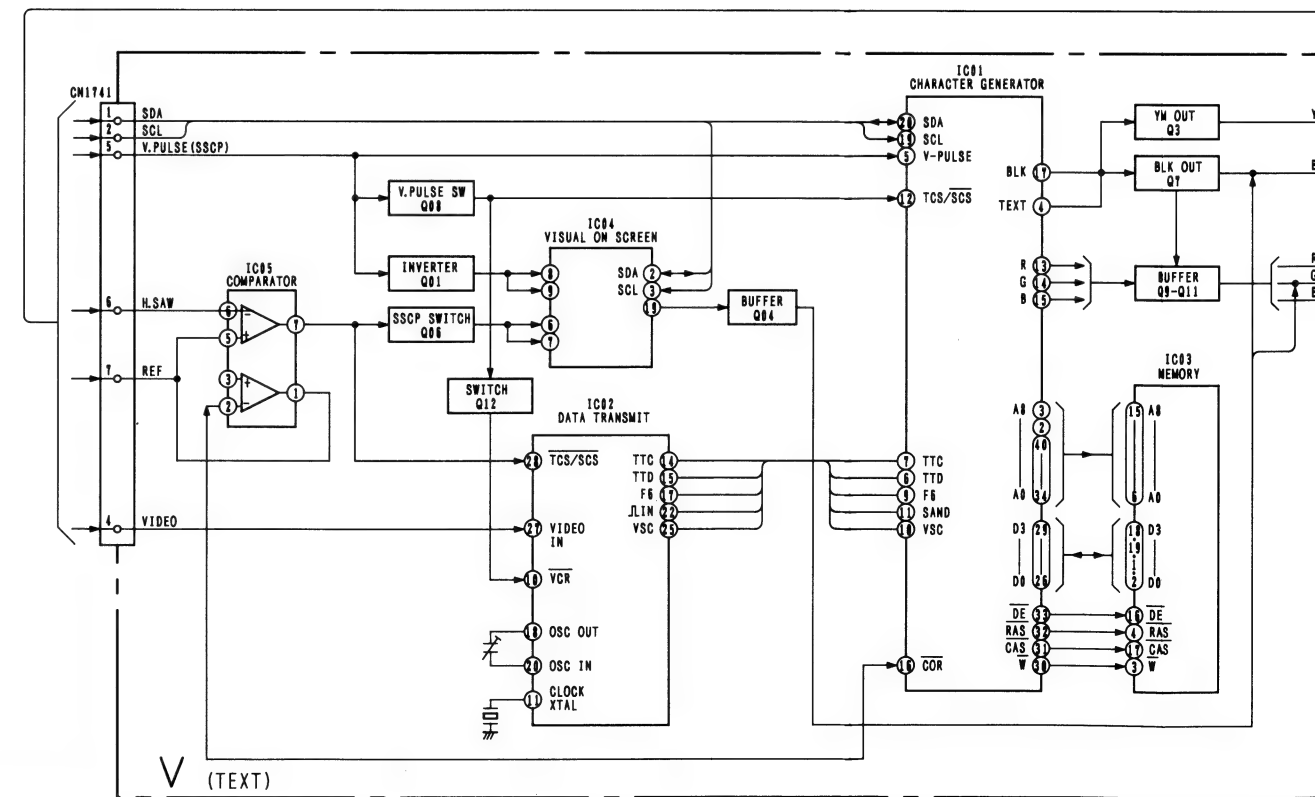
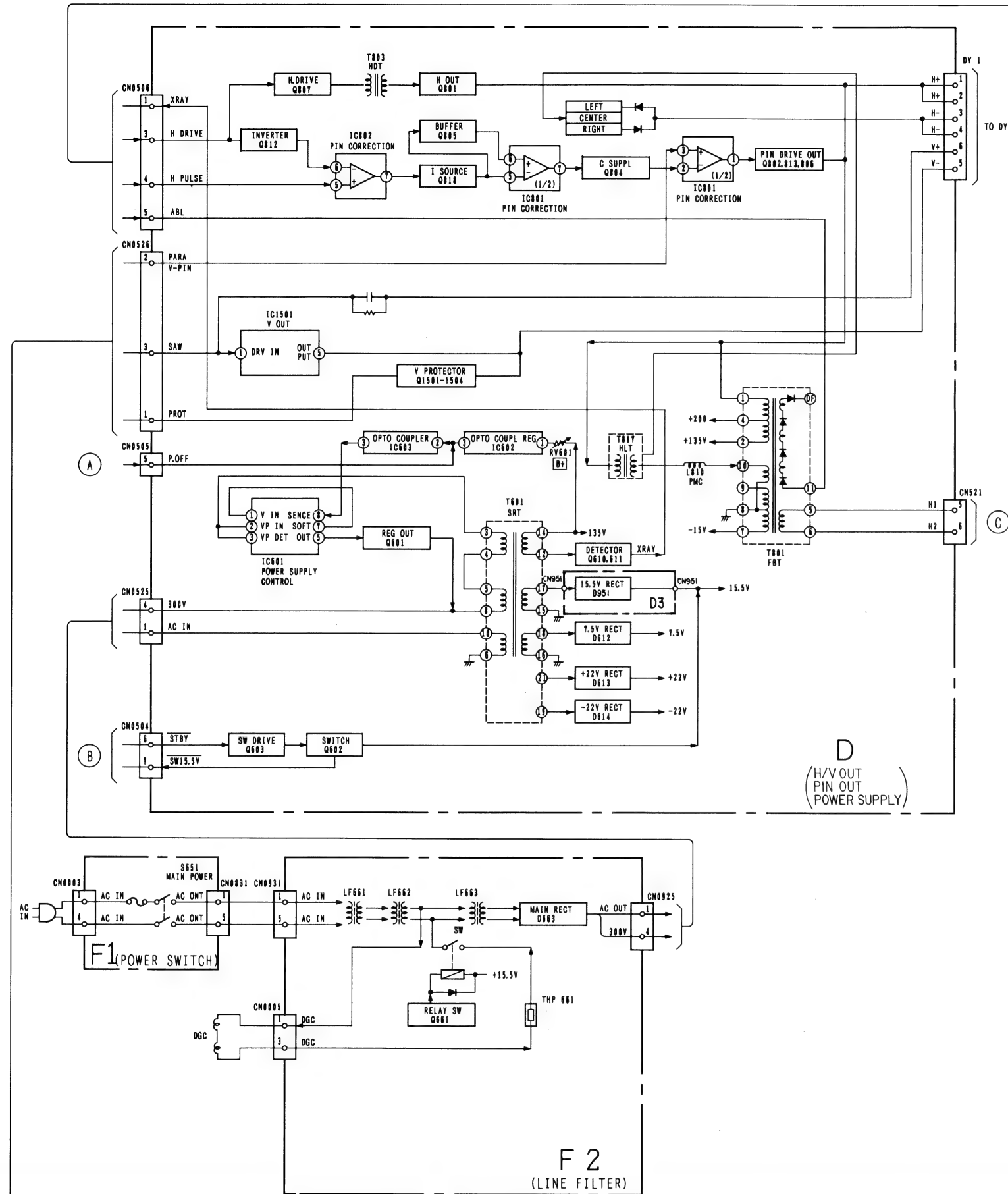
In case of no acknowledge bit, LED A and LED B start blinking as shown.



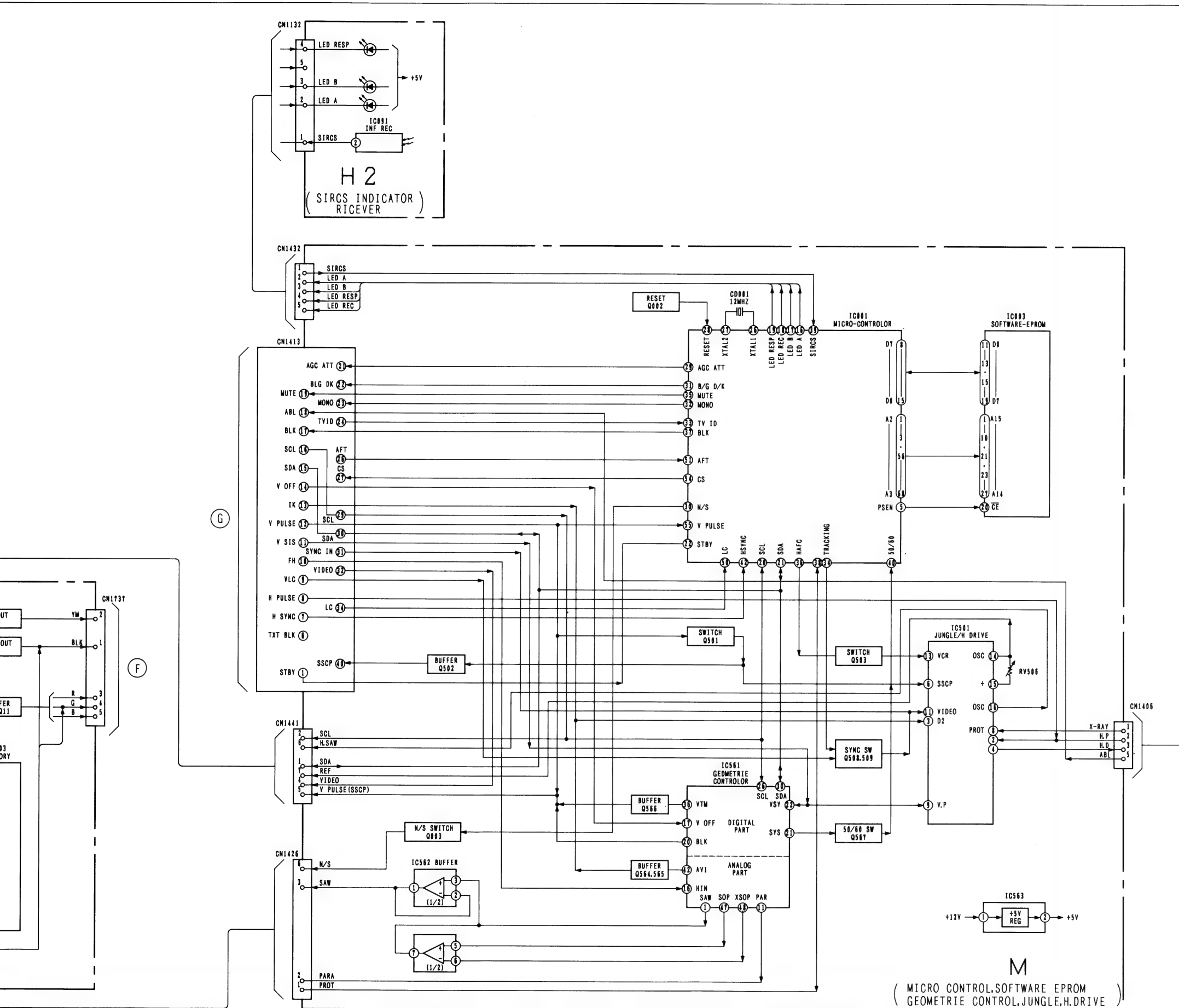


## SECTION 5 DIAGRAMS

### 5-1. BLOCK DIAGRAM (1)



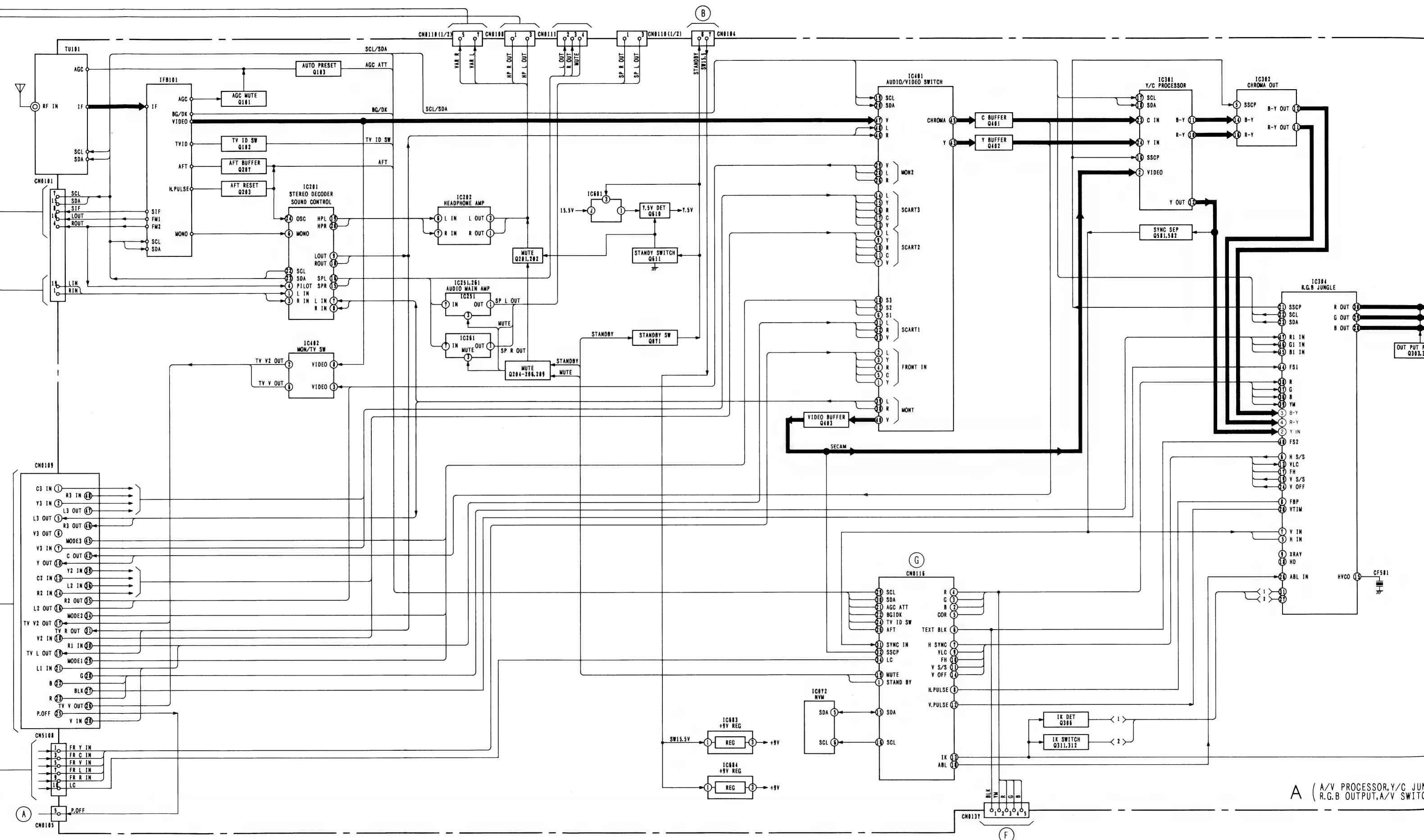




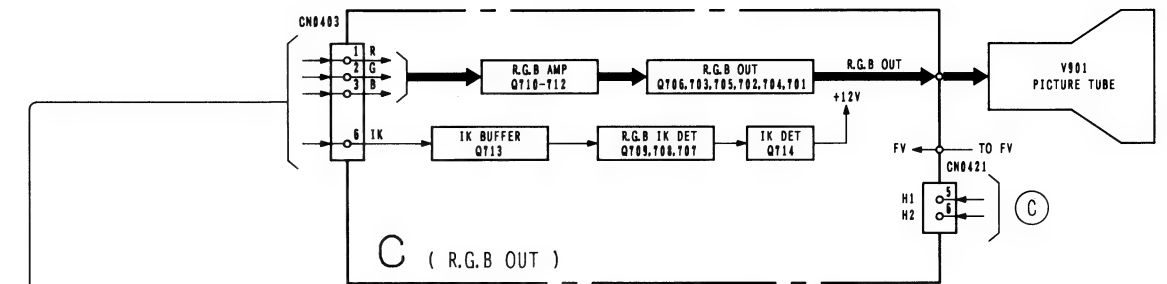
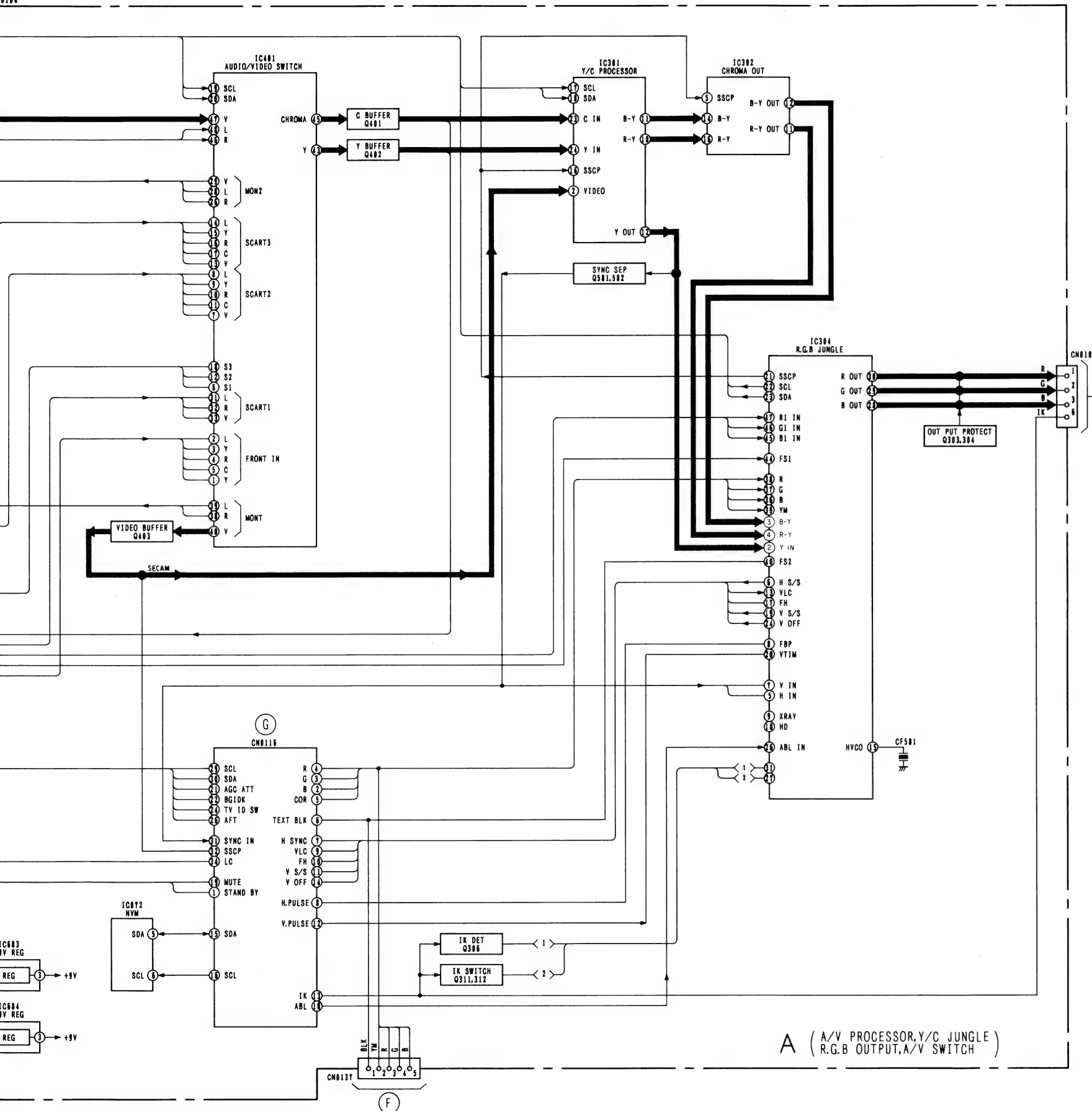






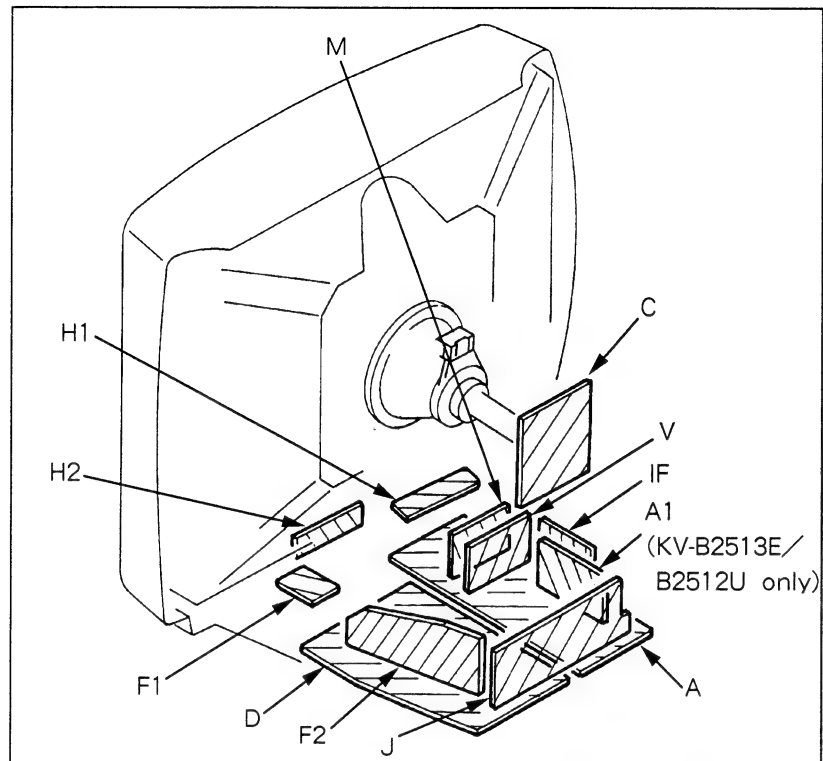










## 5-3. CIRCUIT BOARDS LOCATION



## Reference information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NONFLAMMABLE CARBON
	FUSE	: NONFLAMMABLE FUSIBLE
	RS	: NONFLAMMABLE METAL OXIDE
	RB	: NONFLAMMABLE CEMENT
	RW	: NONFLAMMABLE WIREWOUND
	※	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
	TA	: TANTALUM
CAPACITOR	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.









Note: Les composants identifiés par une trame et par une marque  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

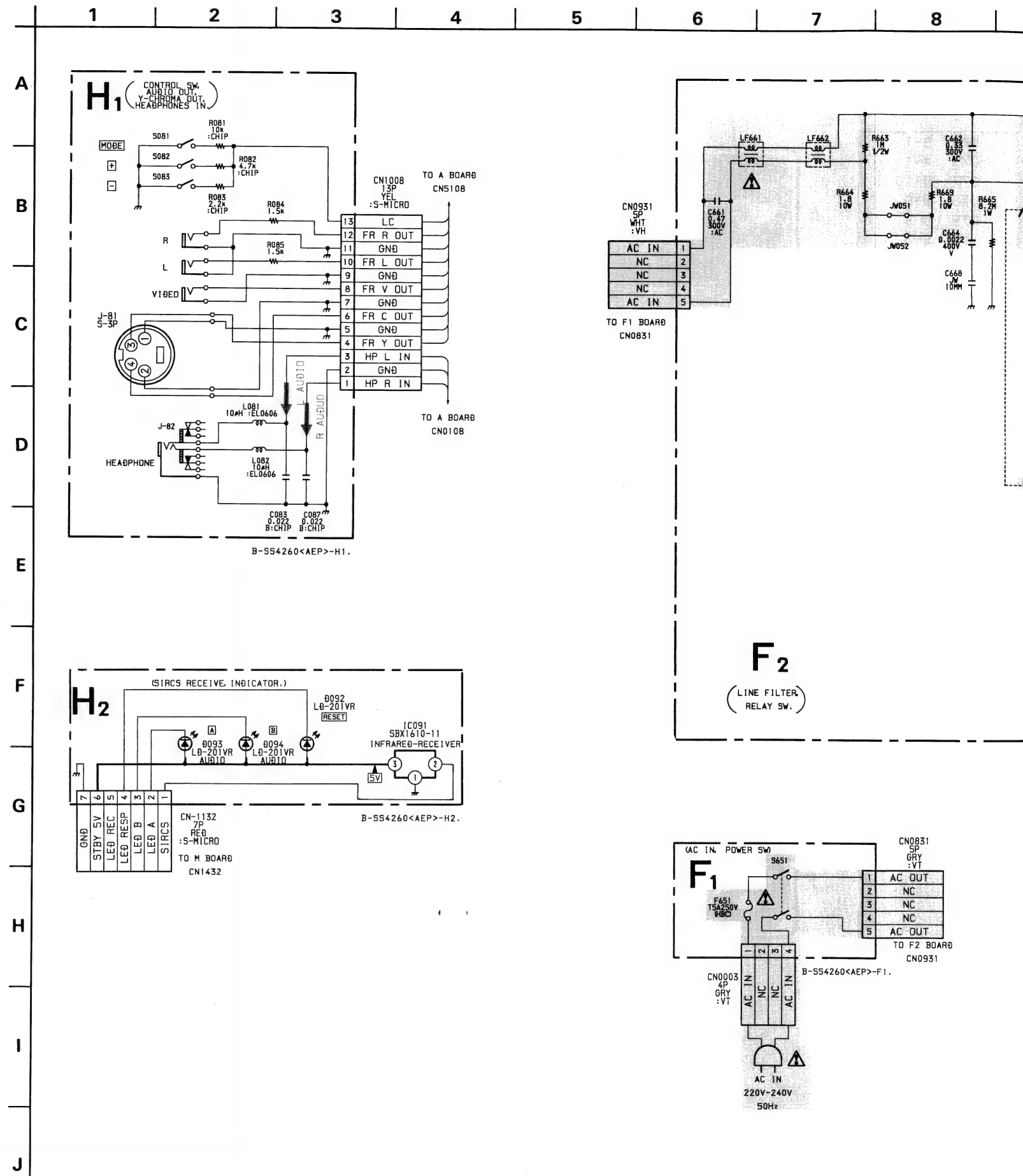
## 5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

## Note :

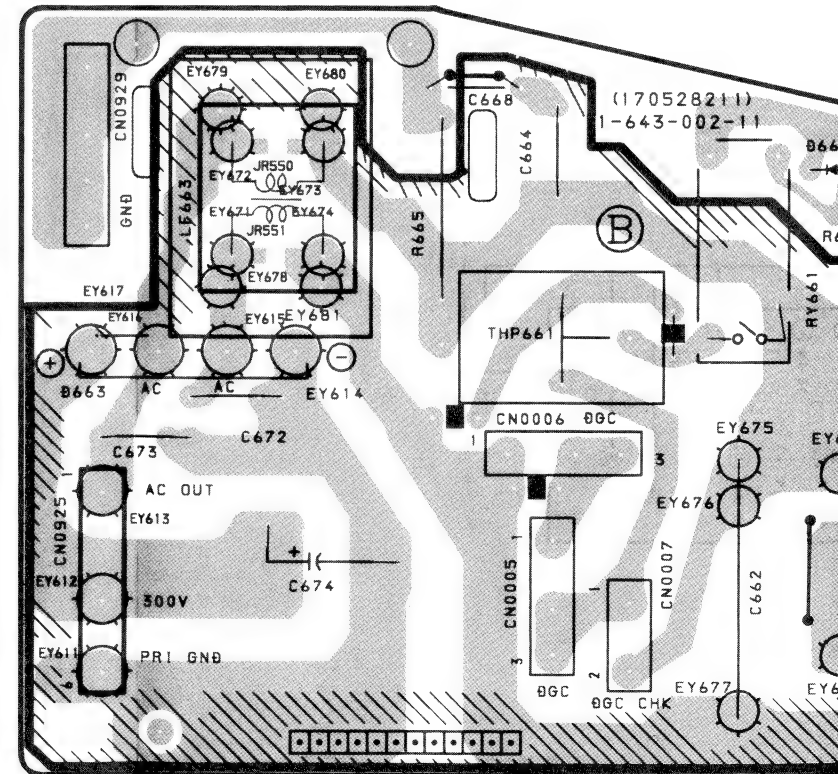
- All capacitors are in  $\mu F$  unless otherwise noted.  
pF :  $\mu \mu F$  50WV or less are not indicated except for electrolytic.
- Indication of resistance, which dose not have one for rating electrical power, is as follows.

Pitch : 5mm  
Rating electrical power :  $\frac{1}{4}W$

- Chip resistor is in 1/10W.
- All resistors are in ohms.  
k  $\Omega$  = 1000  $\Omega$ , M  $\Omega$  = 1000K  $\Omega$
-  : nonflammable resistor.
-  : fusible resistor.
- $\Delta$  : internal component.
-  : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in V.
- Readings are taken with a 10M  $\Omega$  digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
-  : B+ bus.
-  : B- bus.
-  : signal path.(RF)
-  : earth - ground
-  : earth - chassis

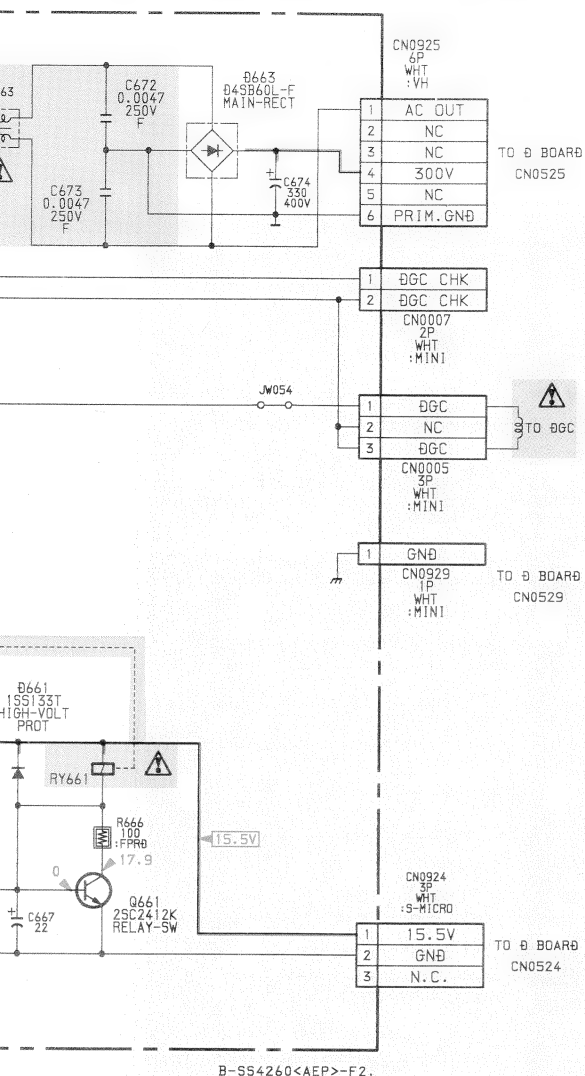








11 12 13

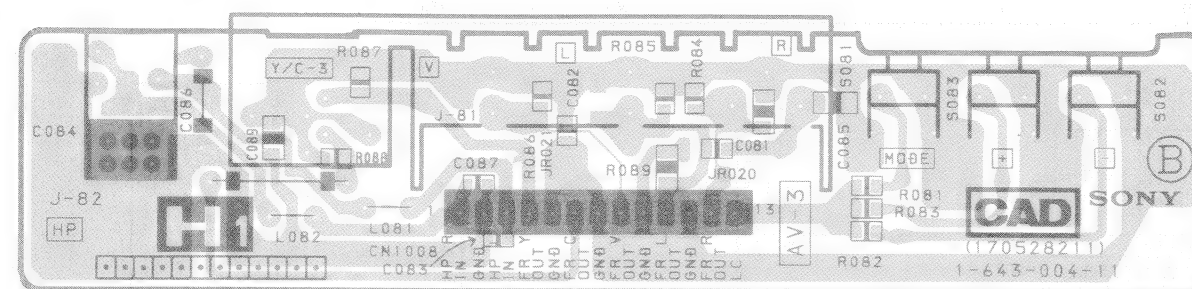

**H1** [CONTROL SW, AUDIO OUT,  
Y-CHROMA OUT,  
HEADPHONE IN]

**H2** [SIRCS RECEIVER,  
INDICATOR]

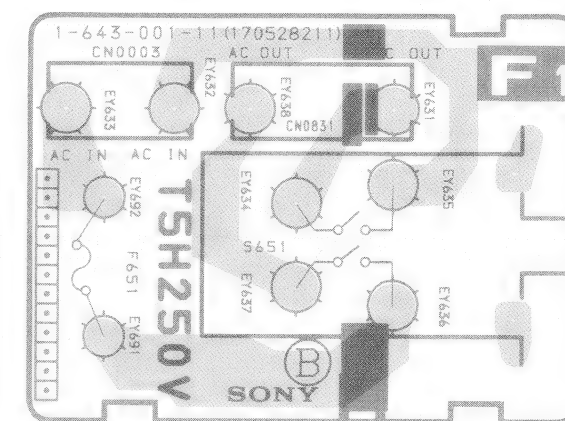
**F1** [AC IN, POWER SW]

**F2** [LINE FILTER,  
RELAY SW]

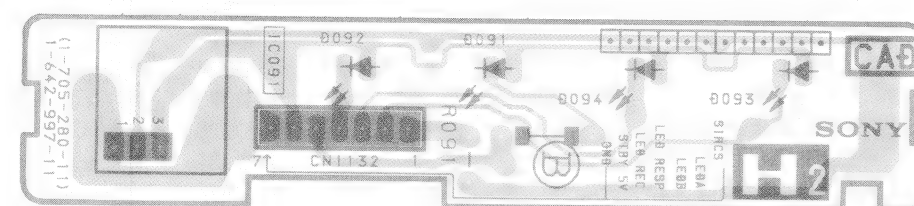
- H1 BOARD -



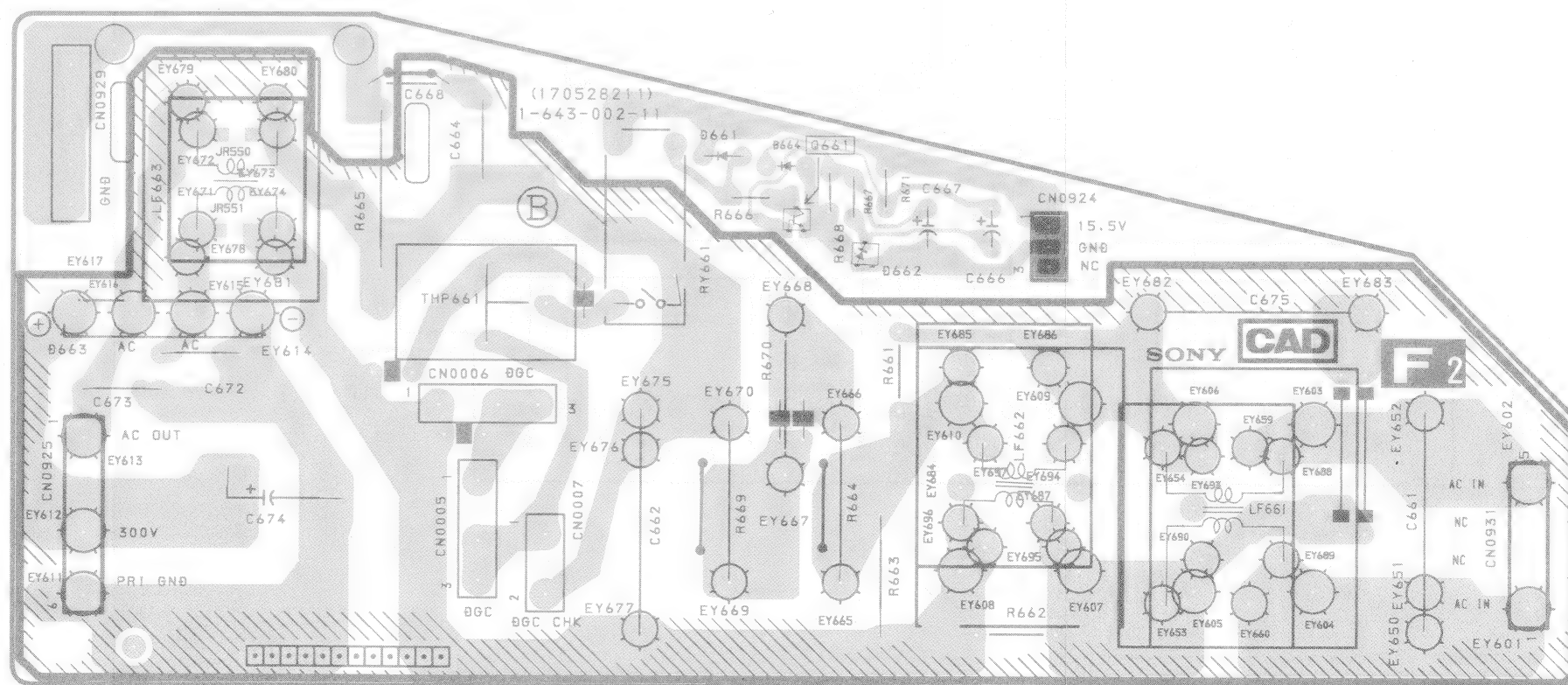
- F1 BOARD -



- H2 BOARD -





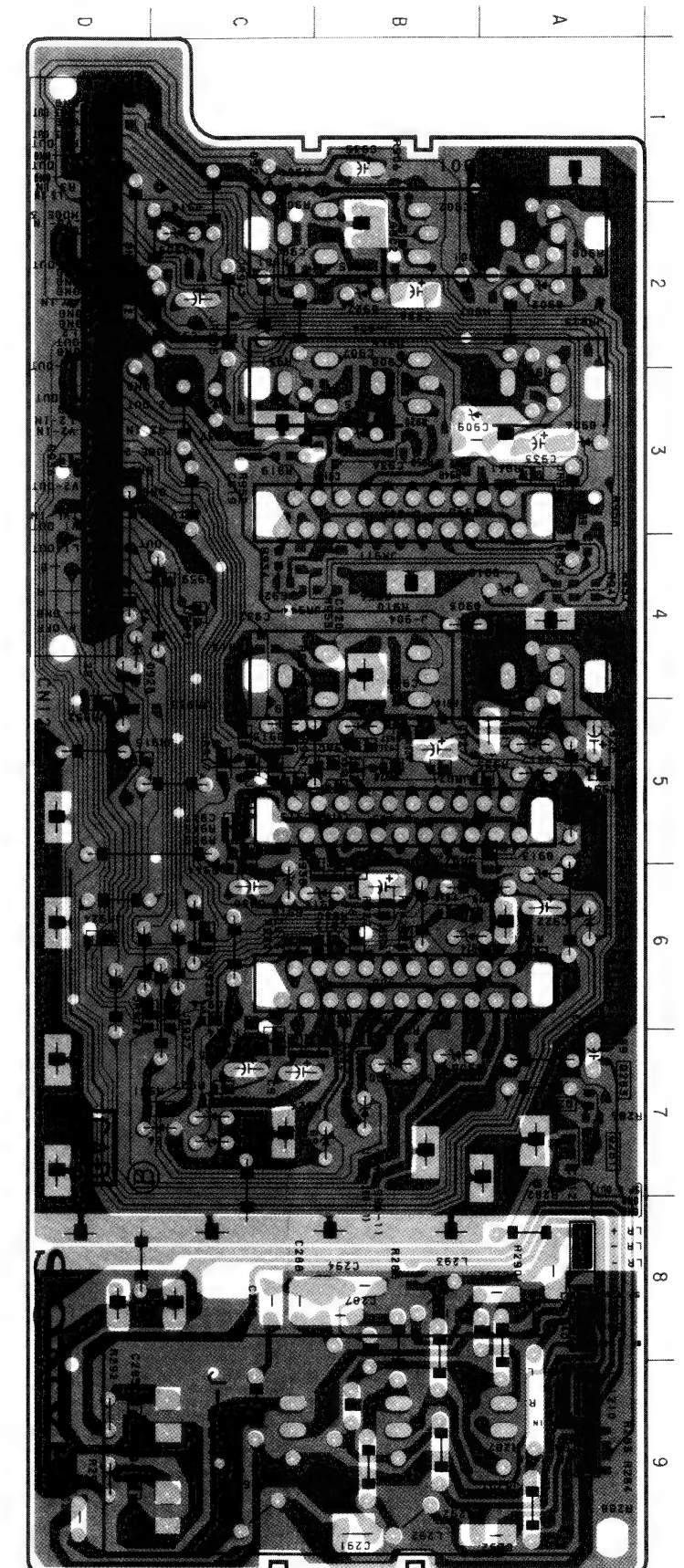
- F2 BOARD -







-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.



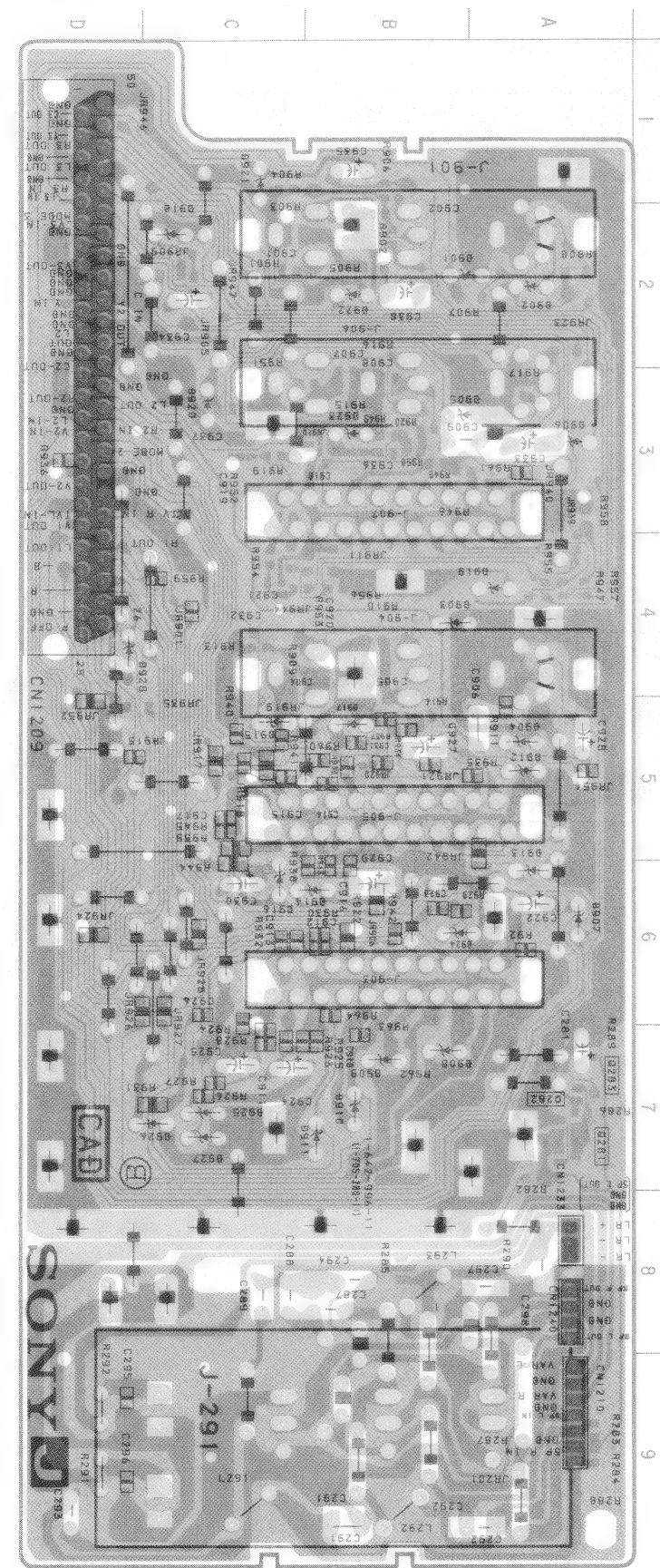


**J** AUDIO IN/OUT,  
Y-CHROMA IN/OUT,  
VIDEO IN/OUT

**A** TUNER, AUDIO, CONTROL, AUDIO AMP  
AV SWITCH, RGB JUNGLE,  
Y/C PROCESSOR

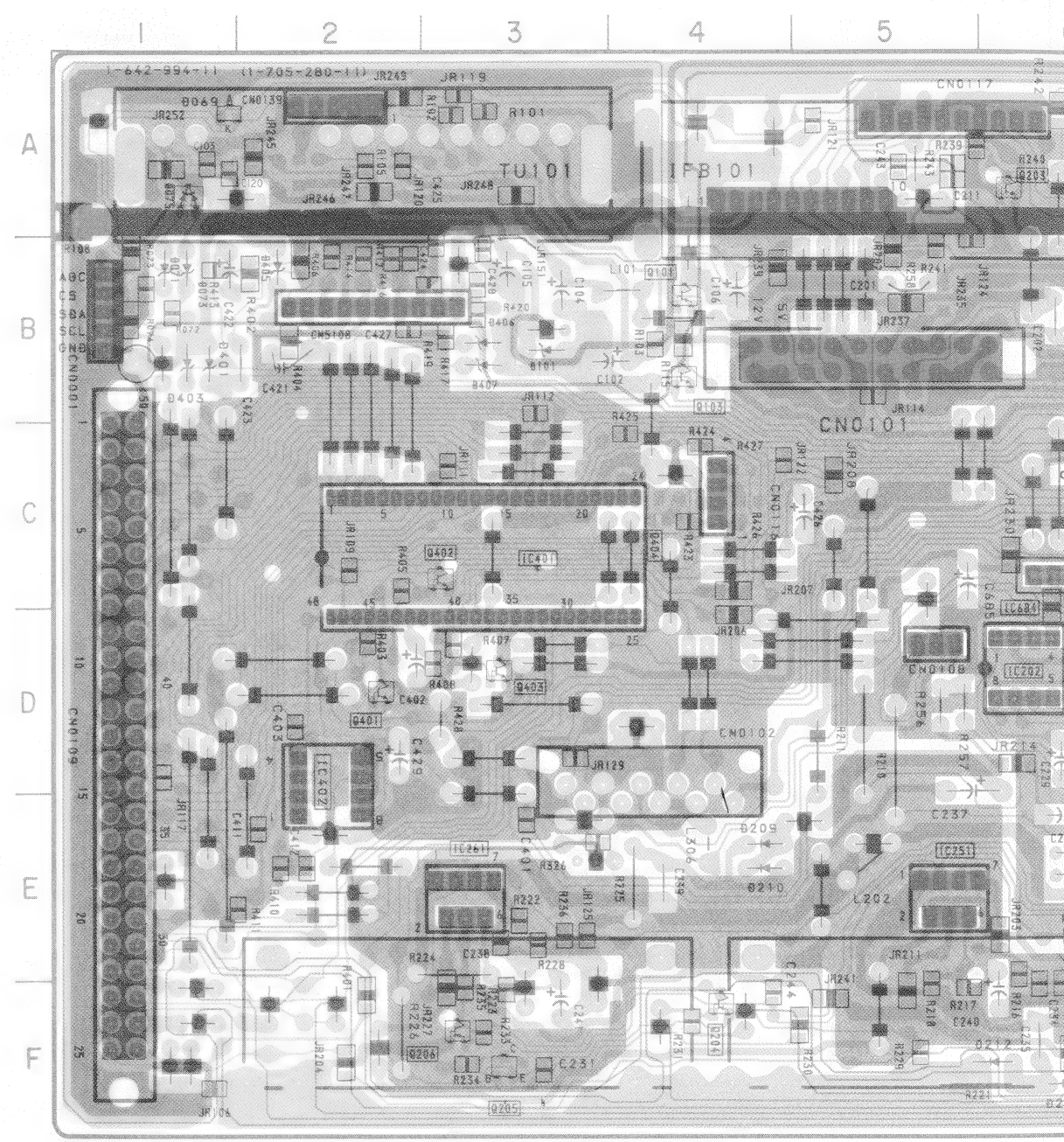
- J BOARD -

DIODE	
D903	B-4
D904	A-5
D907	A-6
D908	B-7
D909	B-7
D910	B-7
D911	B-7
D912	A-5
D913	A-6
D914	B-6
D915	C-5
D916	C-6
D917	B-5
D924	B-6
D925	C-7
D926	C-7
D927	C-7
D928	D-4



IC	
IC072	B-8
201	D-7
202	D-6
251	E-5
261	E-3
301	A-10
302	A-13
304	C-13
401	C-3
402	D-2
681	E-12
683	F-11
684	C-6
TRANSISTOR	
Q071	F-12
101	B-4
102	A-9
103	B-4
201	E-6
202	E-6
203	A-6
204	F-4
205	F-3
206	F-3
207	B-8
209	F-10
303	A-9
304	E-13
306	E-12
308	D-12
309	D-11
311	D-10
312	D-10
401	D-2
402	C-3
403	D-3
581	C-11
582	C-11
610	F-12
611	F-12
683	F-11
DIODE	
D068	B-9
069	A-1
071	B-1

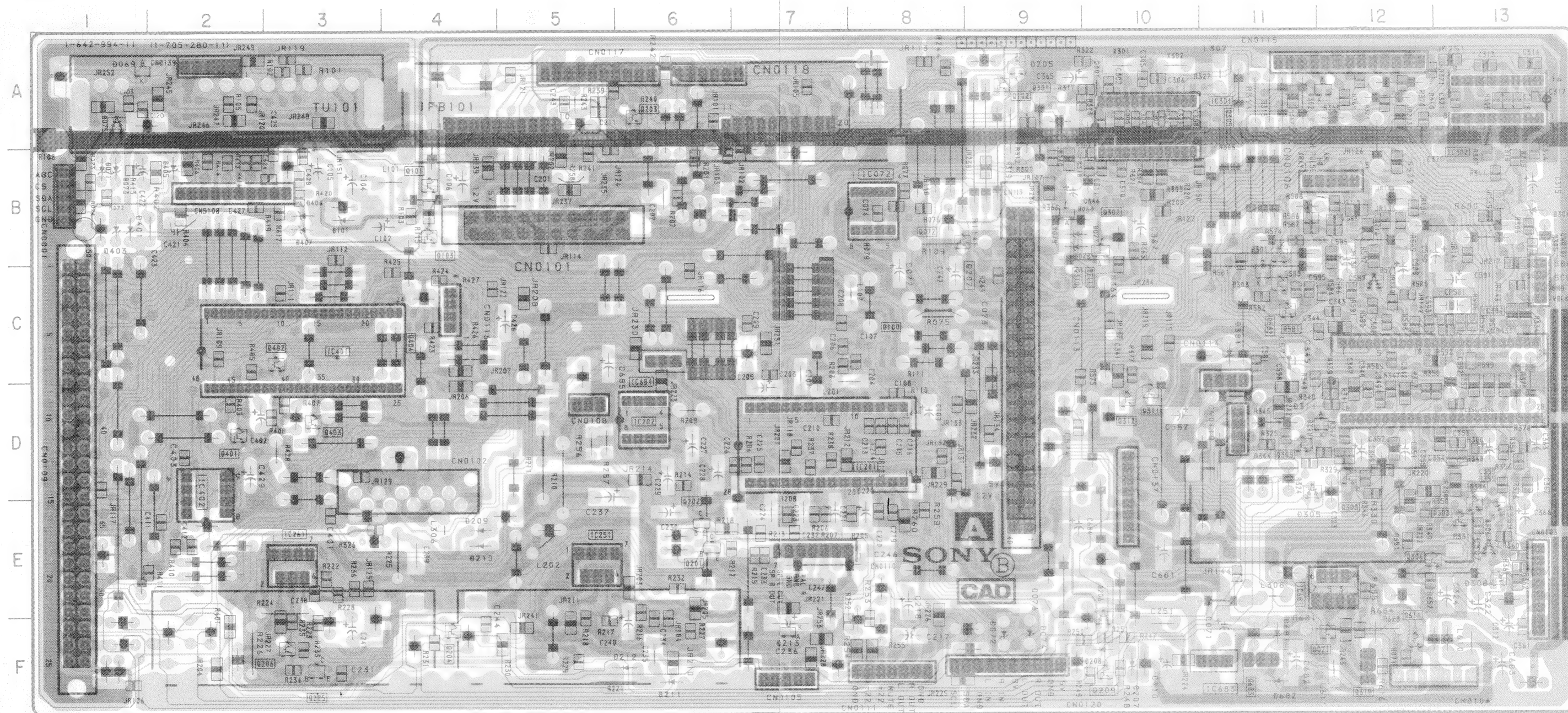
- A BOARD -





- A BOARD -

073 B-1  
 075 A-1  
 077 B-10  
 078 B-9  
 079 B-9  
 01 B-3  
 05 A-9  
 06 F-10  
 07 F-10  
 08 F-10  
 09 E-4  
 10 E-4  
 11 F-6  
 12 F-6  
 13 F-7  
 01 B-11  
 02 A-12  
 03 C-11  
 04 B-13  
 05 E-11  
 06 E-13  
 07 E-13  
 08 E-13  
 10 B-10  
 11 B-12  
 18 C-11  
 01 B-1  
 03 B-1  
 05 B-2  
 06 B-3  
 07 B-3  
 71 C-12  
 81 F-11  
 82 F-11



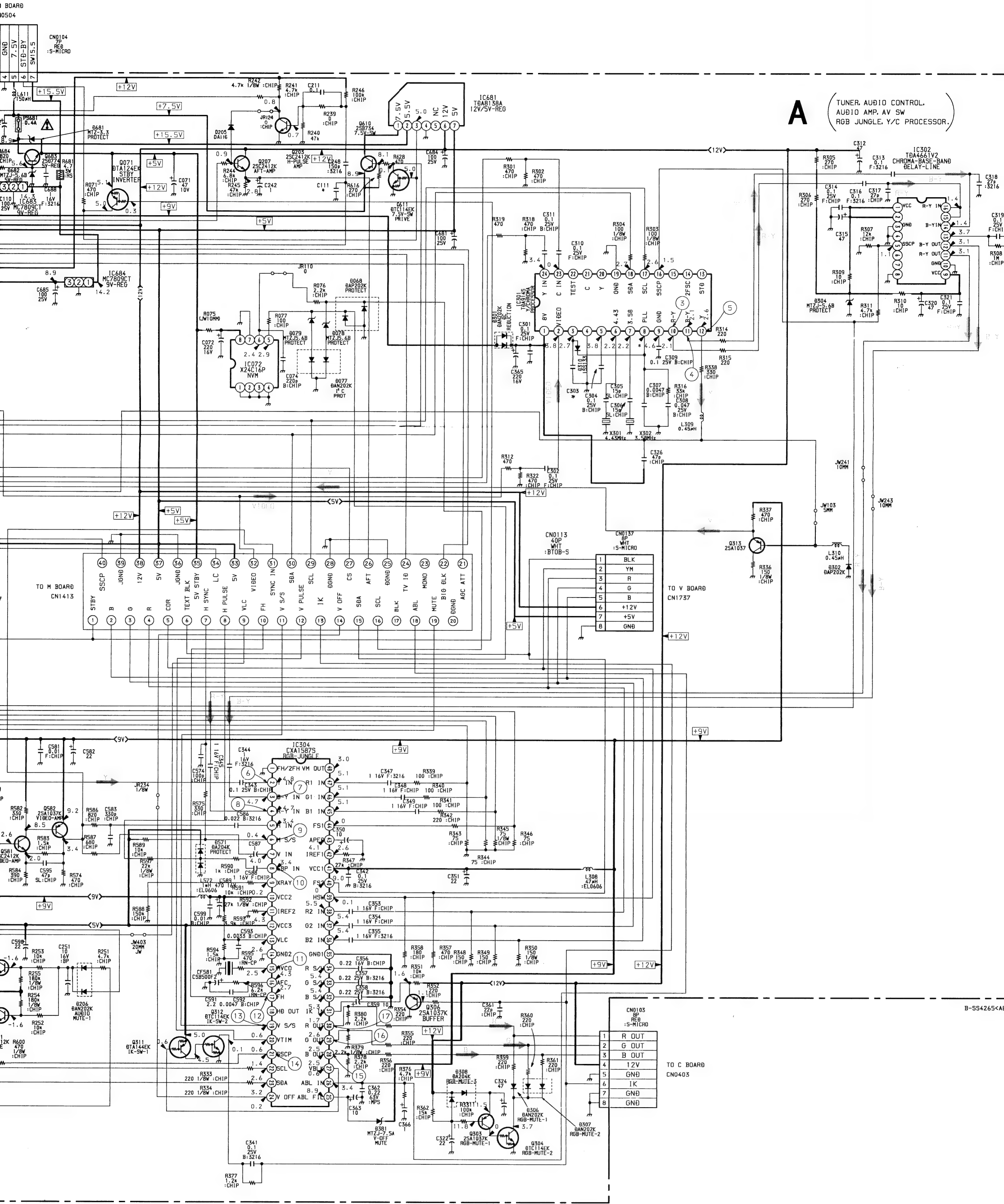
Note:

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.









TO V BOARD

CN1737

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31

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33

34

35

36

37

38

39

40

BLK

YH

R

G

B

+12V

+5V

GND

TO C BOARD

CN0403

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2

3

4

5

6

7

8

9

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11

12

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14

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16

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31

32

33

34

35

36

37

38

39

40

R OUT

G OUT

B OUT

12V

GND

1K

GND

GND

IC681

TDA8138A

12V/5V-REG

IC684

MC7809CT

9V-REG

IC302

TDA4661V2

CHROMA-BASE-BAND DELAY-LINE

IC304

CXA1587S

RGB-JUNGLE

IC305

2SA1037

AMP

IC306

2SA1037

AMP

IC307

2SA1037

AMP

IC308

2SA1037

AMP

IC309

2SA1037

AMP

IC310

2SA1037

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IC397

2SA1037

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IC398

2SA1037

AMP

IC399

2SA1037

AMP

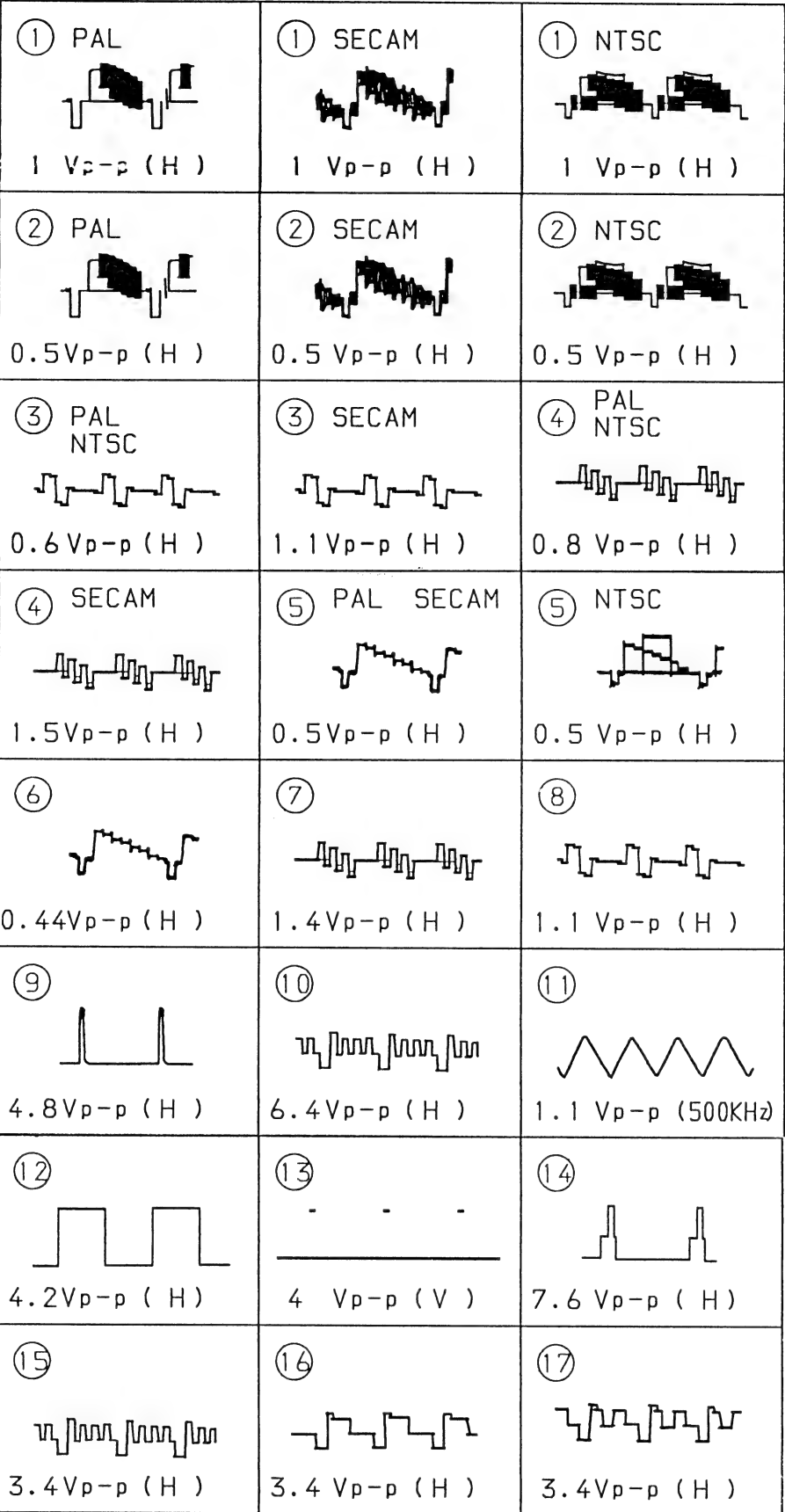
IC400

2SA1037

AMP



• WAVEFORMS A BOARD

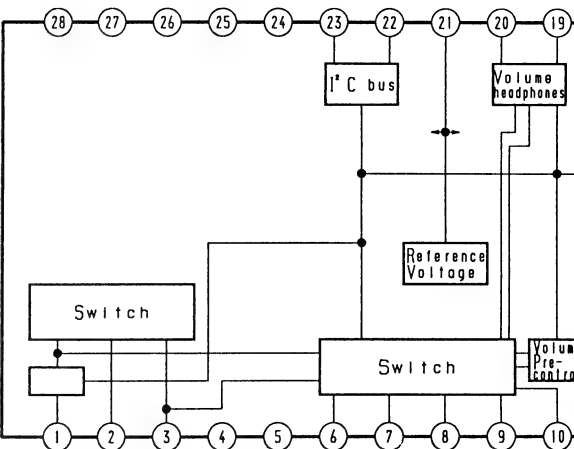


As to the voltage value shown by the mark ※ on the Schematic Diagram, see another list.

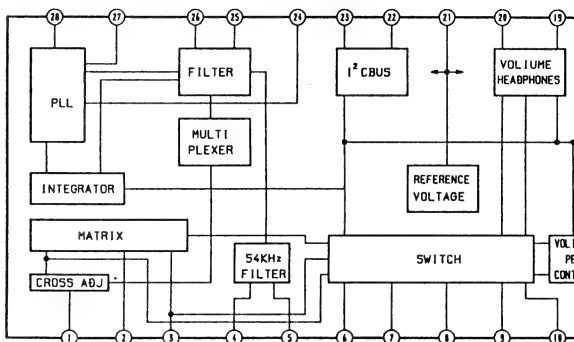
	PAL	SECAM	NTSC	NTSC
			3.58	4.43
IC301 ⑧	5.0	4.6	5.0	5.0

	KV-B2511D KV-B2511A KV-B2511K	KV-B2511B	KV-B2513E	KV-B2512U
C106	4.7/50V	10/50V	4.7/50V	4.7/50V
C111	-	0.001/50V	-	-
CN0101	-	-	20P	20P
IC201	TDA6612	TDA6612	TDA6612	TDA6622
IFB101	IFH-389	IFH-389F	IFH-389	IFH-395
TU101	UV-916H	UV-916H	UV-916H	U-944C

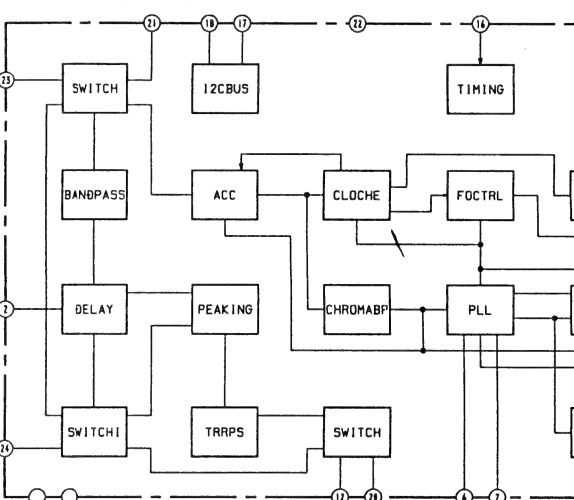
• A BOARD IC201 TDA6622 (KV-B2512U only)



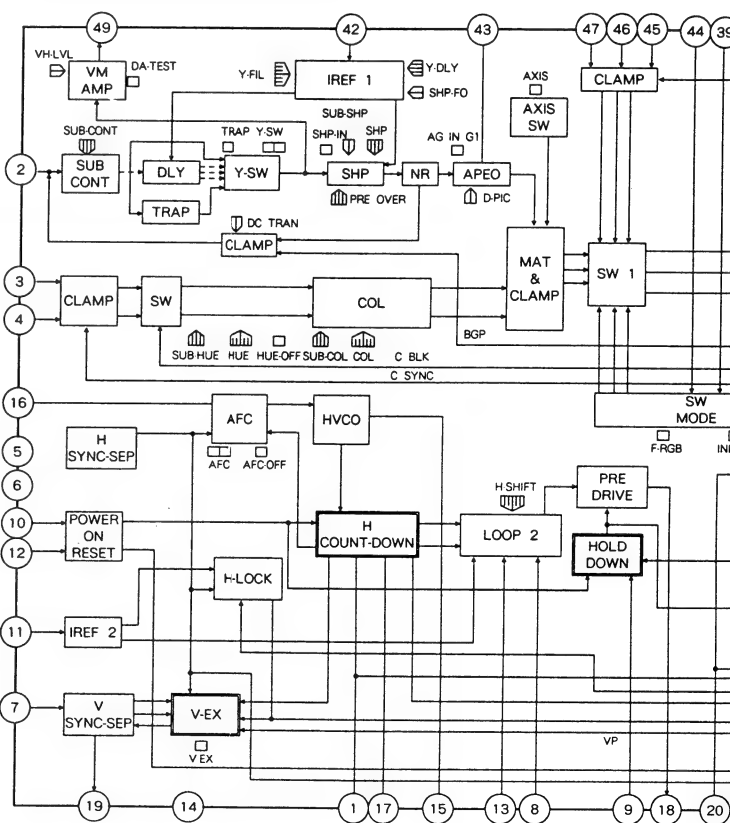
• A BOARD IC201 TDA6612



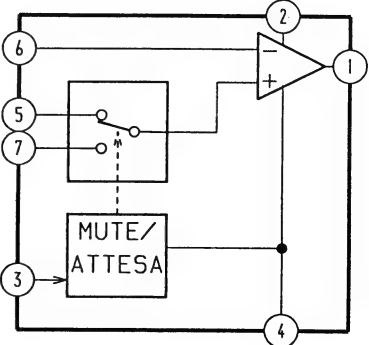
• A BOARD IC301 TDA9145



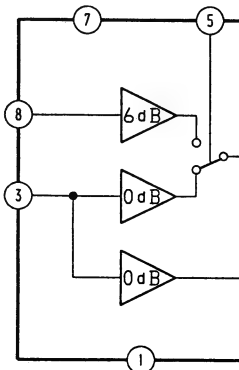
• A BOARD IC304 CXA1587S



• A BOARD IC251 TDA2052







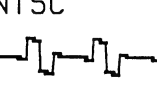
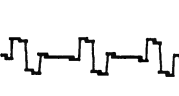

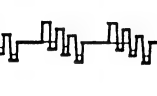



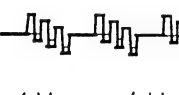
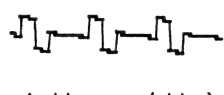
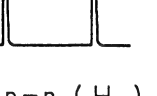
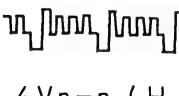

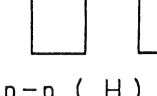
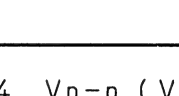
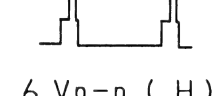
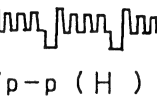

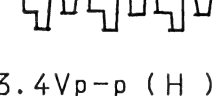


• A BOARD IC402 TE





# PERFORMS A BOARD

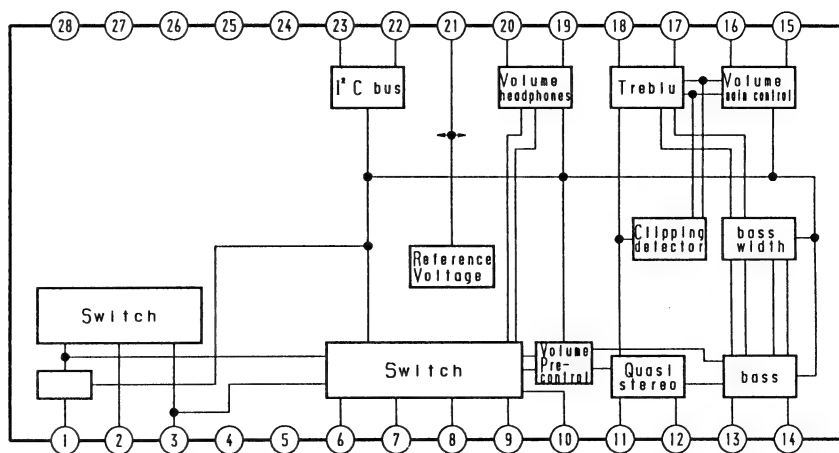
PAL  Vp-p (H)	① SECAM  1 Vp-p (H)	① NTSC  1 Vp-p (H)
PAL  Vp-p (H)	② SECAM  0.5 Vp-p (H)	② NTSC  0.5 Vp-p (H)
PAL NTSC  Vp-p (H)	③ SECAM  1.1 Vp-p (H)	④ PAL NTSC  0.8 Vp-p (H)
SECAM  Vp-p (H)	⑤ PAL SECAM  0.5 Vp-p (H)	⑤ NTSC  0.5 Vp-p (H)
 4Vp-p (H)	⑦  1.4 Vp-p (H)	⑧  1.1 Vp-p (H)
 Vp-p (H)	⑩  6.4 Vp-p (H)	⑪  1.1 Vp-p (500KHz)
 Vp-p (H)	⑬  4 Vp-p (V)	⑭  7.6 Vp-p (H)
 Vp-p (H)	⑯  3.4 Vp-p (H)	⑰  3.4 Vp-p (H)

the voltage value shown by the  
\* on the Schematic Diagram,  
another list.

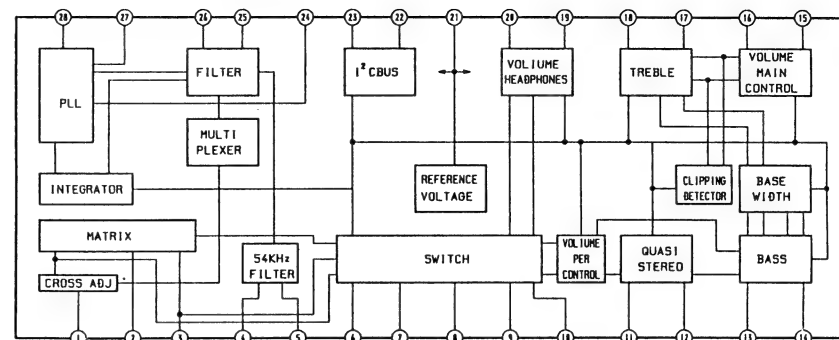
	PAL	SECAM	NTSC	NTSC
			3.58	4.43
01 ⑧	5.0	4.6	5.0	5.0

	KV-B2511D KV-B2511A KV-B2511K	KV-B2511B	KV-B2513E	KV-B2512U
6	4.7/50V	10/50V	4.7/50V	4.7/50V
1	-	0.001/50V	-	-
01	-	-	20P	20P
01	TDA6612	TDA6612	TDA6612	TDA6622
01	IFH-389	IFH-389F	IFH-389	IFH-395
01	UV-916H	UV-916H	UV-916H	U-944C

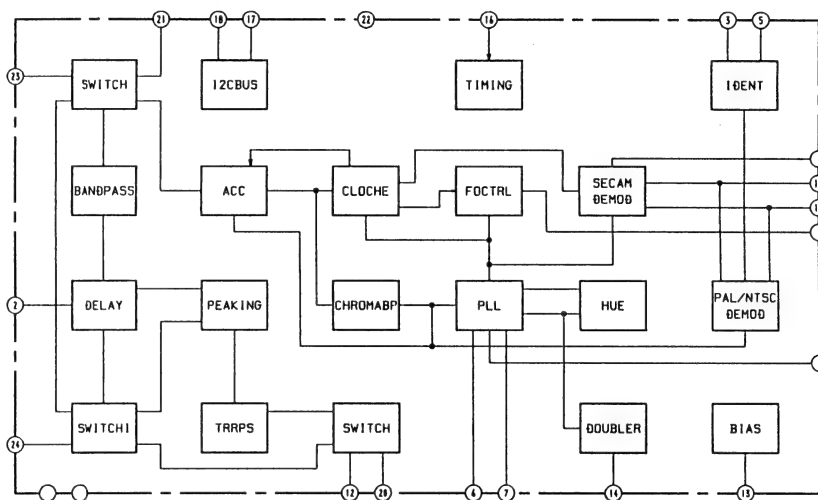
## • A BOARD IC201 TDA6622 (KV-B2512U only)



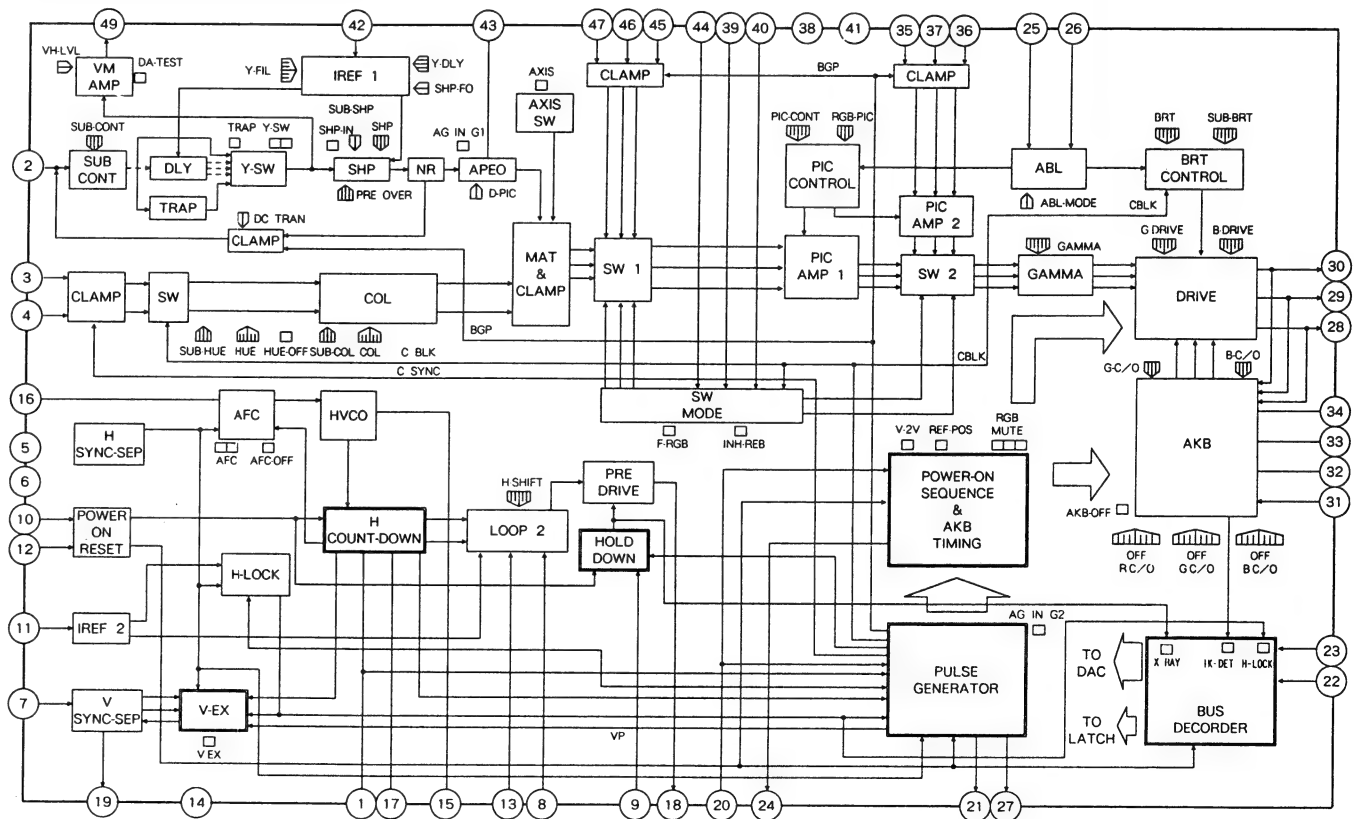
## • A BOARD IC201 TDA6612



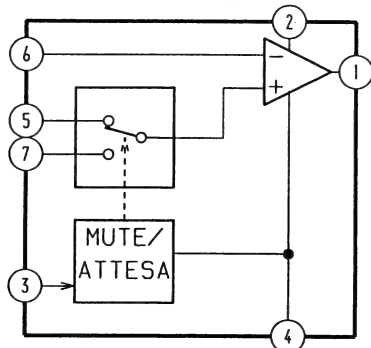
## • A BOARD IC301 TDA9145



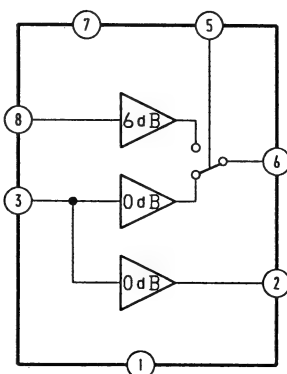
## • A BOARD IC304 CXA1587S



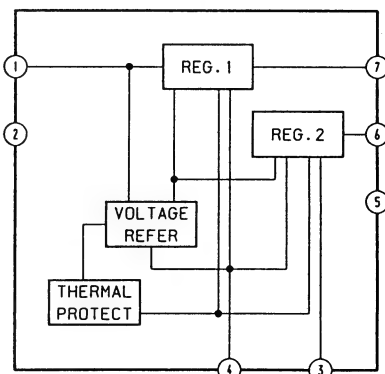
## • A BOARD IC251 TDA2052



## • A BOARD IC402 TEA2114



## • A BOARD IC681 TDA8134





The diagram illustrates the functional blocks of a television receiver and their interconnections. The blocks are organized into two main horizontal rows, with signal paths connecting them.

**Top Row Blocks (from left to right):**

- OUTPUT STAGE FOR VERTICAL SYNC OR COMPOSITE SYNC (Pin 9)
- PROTECTION CIRCUIT (POS LEVEL: 8V, NEG LEVEL: 4V) (Pin 8)
- MUTING STAGE (open-collector) (Pin 7)
- OUTPUT STAGE FOR BURST GATING & HOR/VERT BLANKING (Pin 6)
- SUPPLY VOLTAGE SENSOR (Pin 5)
- OUTPUT STAGE FOR HORIZONTAL DRIVE (open-collector) (Pin 4)
- PHASE DETECTOR 2 (Pin 3)
- LINE FLYBACK CONTROL GENERATION (Pin 2)
- OUTPUT STAGE FOR SPOT SUPPRESSION (open-collector) (Pin 1)

**Bottom Row Blocks (from left to right):**

- GENERATION OF COMPOSITE SYNC SLICING LEVEL (50% of sync) (Pin 14)
- BLACK LEVEL DETERMINATION & VIDEO AMPLIFIER (Pin 11)
- TV TRANSMITTER IDENTIFICATION (Pin 12)
- COINCIDENCE DETECTOR 3 (Pin 13)
- HORIZONTAL OSCILLATOR (Pin 14)
- PHASE DETECTOR 1 (Pin 15)
- CONTROL CURRENT SWITCH (Pin 16)
- VOLTAGE LIMITER (Pin 17)
- VOLTAGE FOLLOWER (as a function of v13-5) (Pin 18)

**Intermediate Blocks (from left to right):**

- THRESHOLD LOAD SENSOR SWITCH (pin 9)
- VERTICAL SYNC & COMPOSITE SYNC SWITCH
- GATE (S-V)
- GATE (S-V)-K
- HORIZONTAL OUTPUT PULSE SUPPRESSION
- HOR PULSE GENERATOR & PHASE SHFT 2
- COINCIDENCE PULSE GENERATOR
- VERT. SYNC SEPARATOR & VERT. SYNC PULSE INTEGRATION
- HORIZONTAL SYNC SEPARATOR
- KEYING PULSE GENERATION (7.5 μs)
- GATE MODE SWITCH
- OSCILLATOR FREQUENCY f<sub>osc</sub> ADJUSTMENT
- COMPENSATION OF I CONTROL ERROR

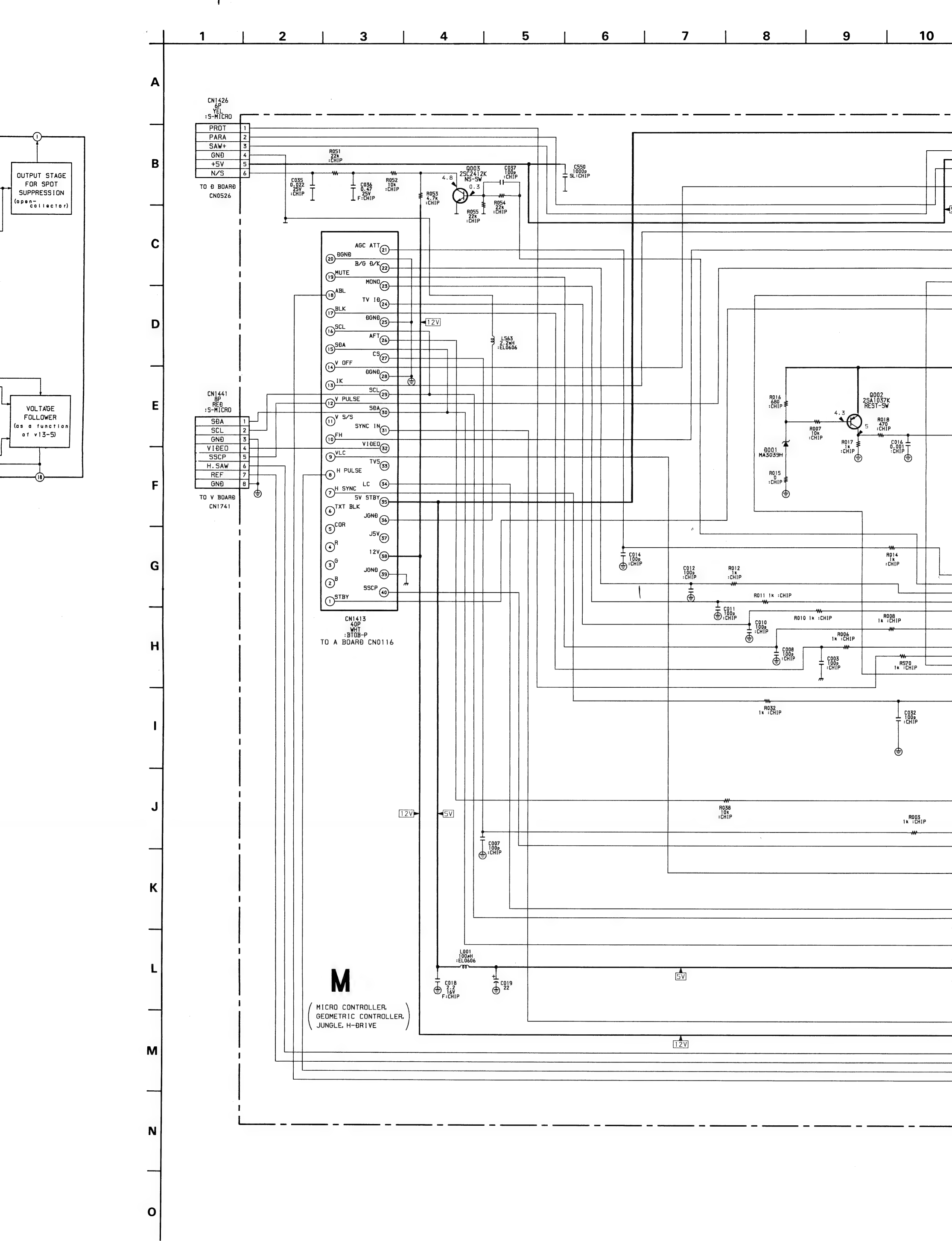
**Signal Paths and Connections:**

- Vertical Sync Path:** Pin 9 connects to the Output Stage for Vertical Sync, Threshold Load Sensor Switch, and Vertical Sync & Composite Sync Switch. The sensor switch output goes to the Vertical Sync Separator & VERT. SYNC PULSE INTEGRATION block. The sync switch output goes to the Vertical Sync Separator & VERT. SYNC PULSE INTEGRATION block and the GATE (S-V) block.
- Horizontal Sync Path:** The Horizontal Sync Separator block outputs to the HORIZONTAL SYNC SEPARATOR, which then feeds into the KEYING PULSE GENERATION (7.5 μs) block. The output of the keying pulse generator goes to the GATE (S-V)-K block and the COINCIDENCE DETECTOR 3 block.
- Gate and Blanking Path:** The GATE (S-V) block outputs to the OUTPUT STAGE FOR BURST GATING & HOR/VERT BLANKING. The GATE (S-V)-K block outputs to the same stage and the HORIZONTAL OUTPUT PULSE SUPPRESSION block.
- Horizontal Drive Path:** The HORIZONTAL OUTPUT PULSE SUPPRESSION block outputs to the OUTPUT STAGE FOR HORIZONTAL DRIVE. The HOR PULSE GENERATOR & PHASE SHFT 2 block outputs to the same stage and the COINCIDENCE PULSE GENERATOR.
- Phase Detection and Control Path:** The COINCIDENCE PULSE GENERATOR outputs to the LINE FLYBACK CONTROL GENERATION. The PHASE DETECTOR 2 outputs to the LINE FLYBACK CONTROL GENERATION and the PHASE DETECTOR 1. The PHASE DETECTOR 1 outputs to the CONTROL CURRENT SWITCH. The CONTROL CURRENT SWITCH outputs to the VOLTAGE LIMITER and the VOLTAGE FOLLOWER.
- Other Connections:** The SUPPLY VOLTAGE SENSOR outputs to the OUTPUT STAGE FOR BURST GATING & HOR/VERT BLANKING. The OSCILLATOR FREQUENCY f<sub>osc</sub> ADJUSTMENT block outputs to the HORIZONTAL OSCILLATOR. The HORIZONTAL OSCILLATOR outputs to the PHASE DETECTOR 1. The VOLTAGE FOLLOWER outputs to the VOLTAGE LIMITER.

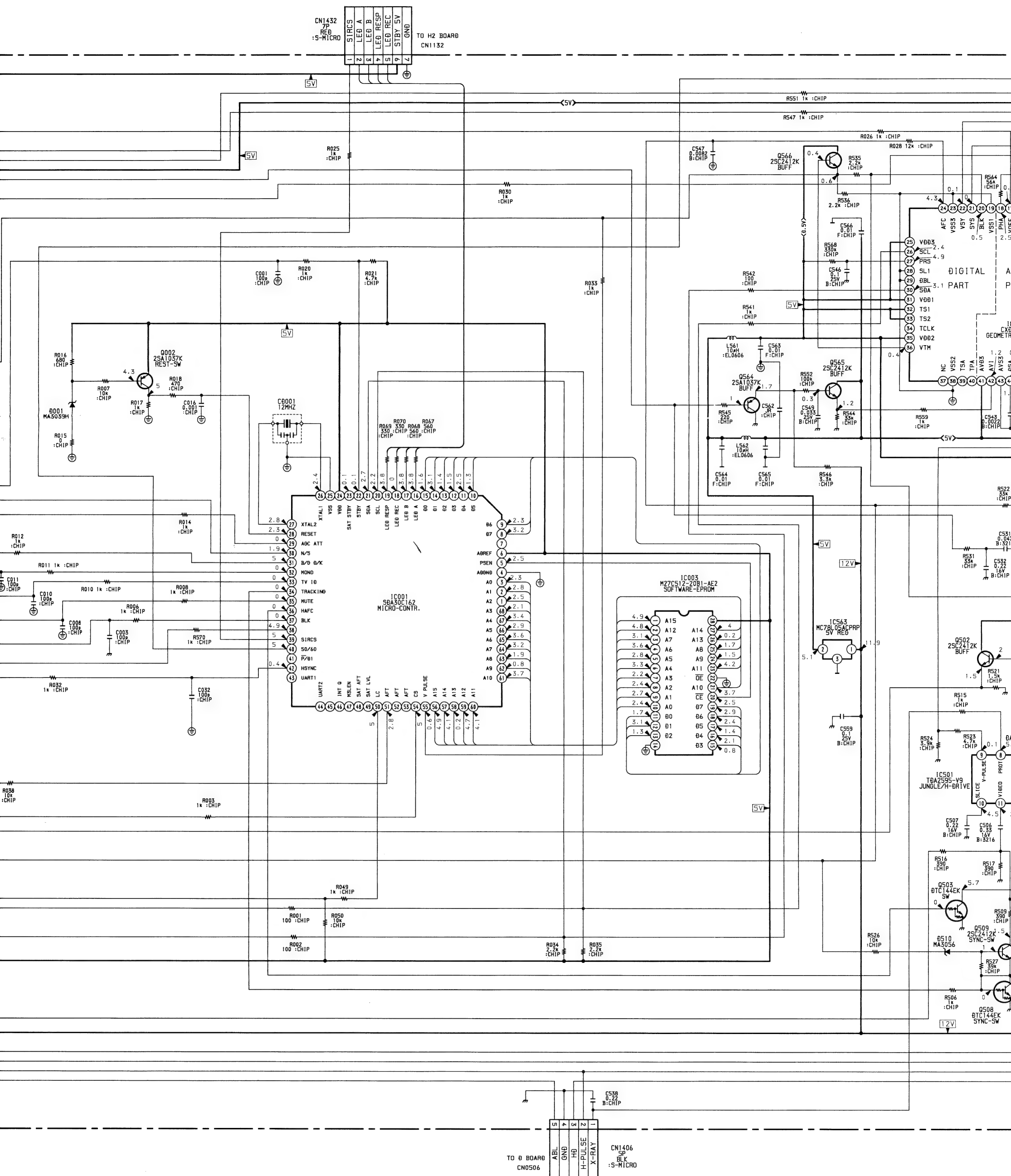
The diagram illustrates the internal architecture of the CDP DSP, organized into several main functional sections:

- Analog Front-End (Top Left):** Includes a COMP (Comparator), LPF (Low Pass Filter), VCO (Voltage Controlled Oscillator), and a CLOCK DIVIDER.
- I/O and Control (Top Center):** Features an IIC BUS DECODER and an ADC (Analog-to-Digital Converter) connected to external pins.
- COUNT DOWN PROCESSOR (Middle Left):** Contains a JUMP logic block, ROM, RAM, ALU (Arithmetic Logic Unit), ACC 1 (Accumulator 1), and an I-ADDRESS GENERATOR leading to I-ROM and I-DECODER.
- DIGITAL SIGNAL PROCESSOR (Middle Right):** Includes another set of ROM, RAM, ALU, ACC 2 (Accumulator 2), R-REG (Register), MULTIPLIER, and an I-ADDRESS GENERATOR leading to I-ROM and I-DECODER.
- Data Conversion and Output (Bottom Right):** A DAC (Digital-to-Analog Converter) receives digital signals from the processors and outputs them through two LPF (Low Pass Filter) stages to various pins.
- Internal Registers and Buses:** Various registers (V, D, E, F) and buses connect the different processing units throughout the chip.



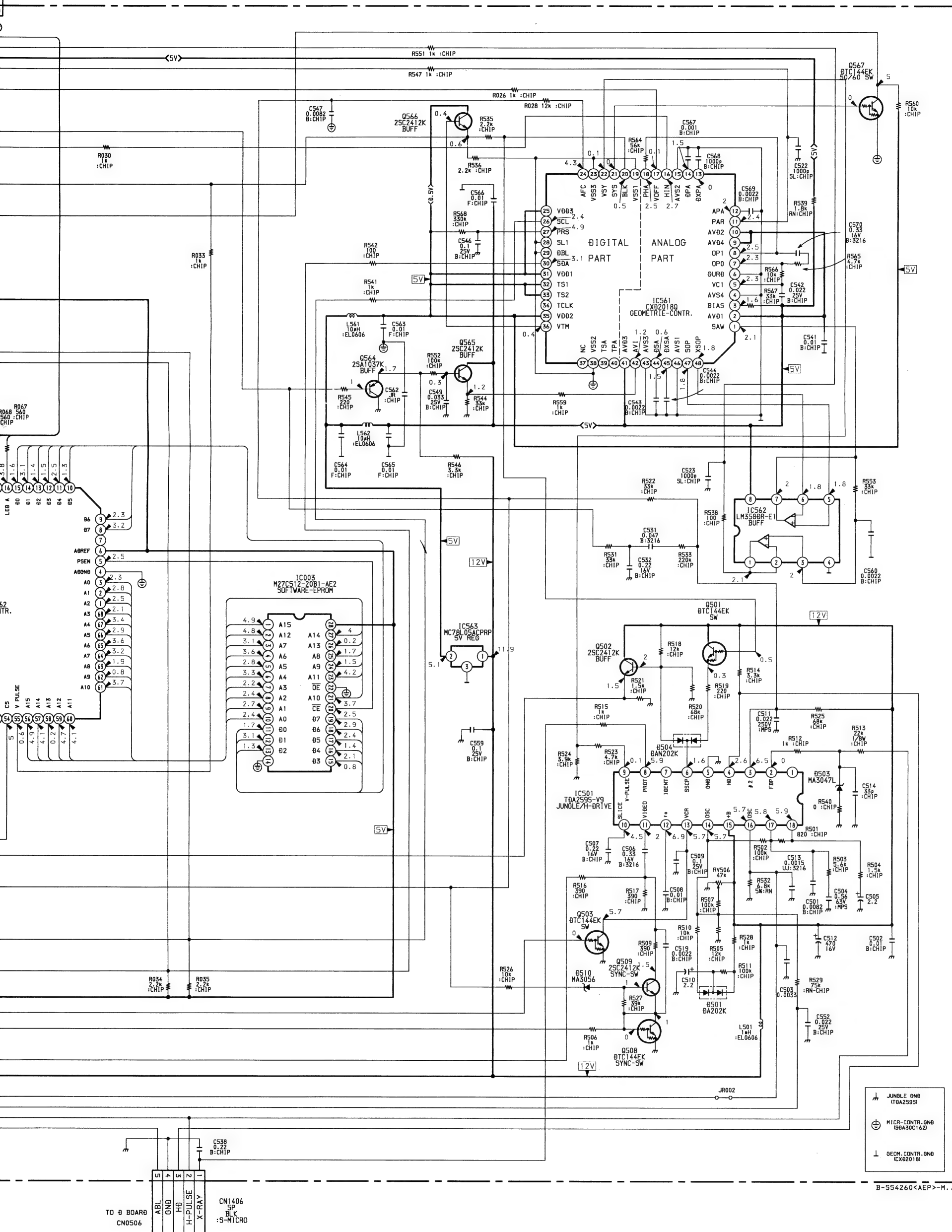








TO H2 BOARD  
CN1132

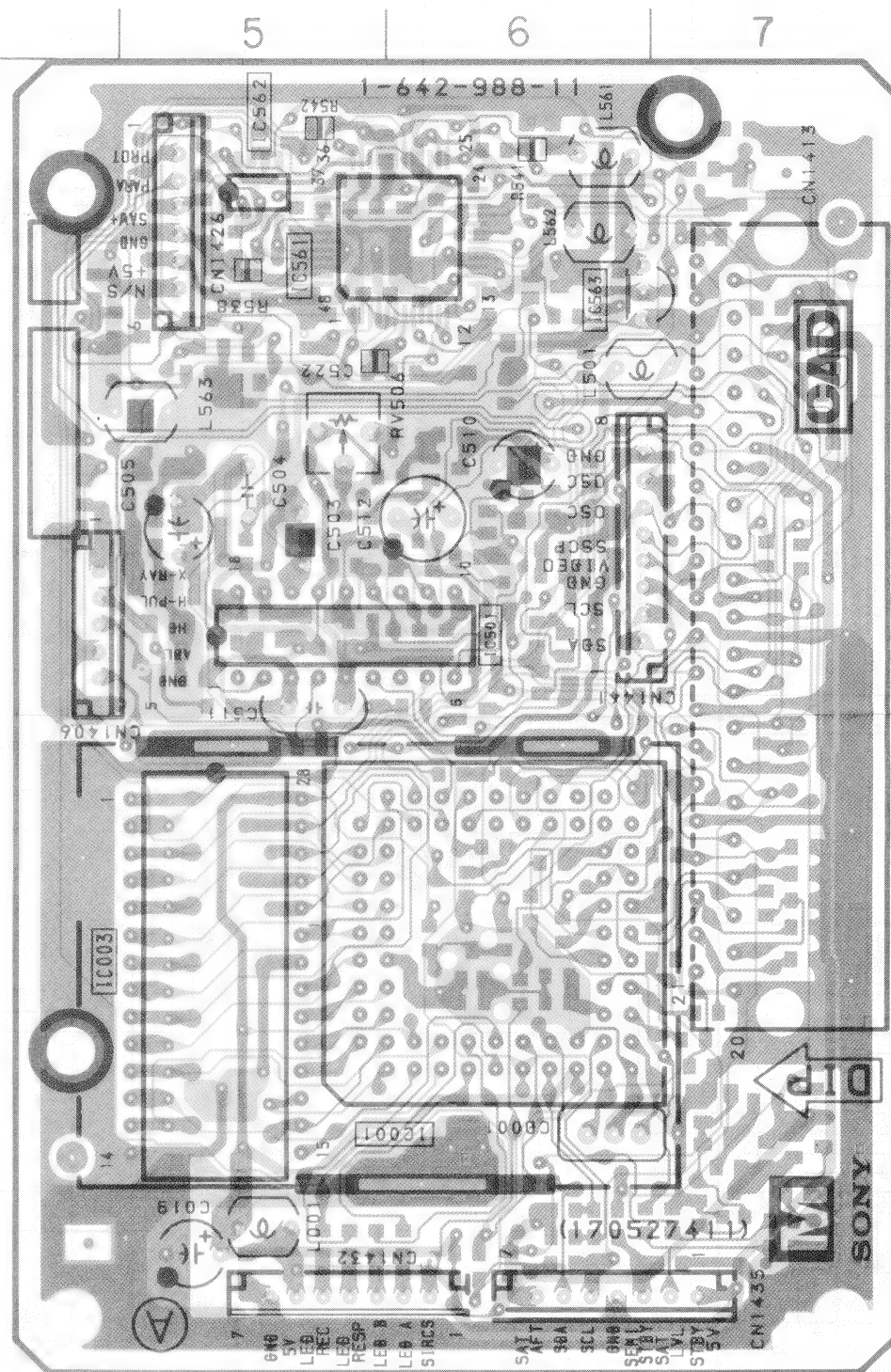
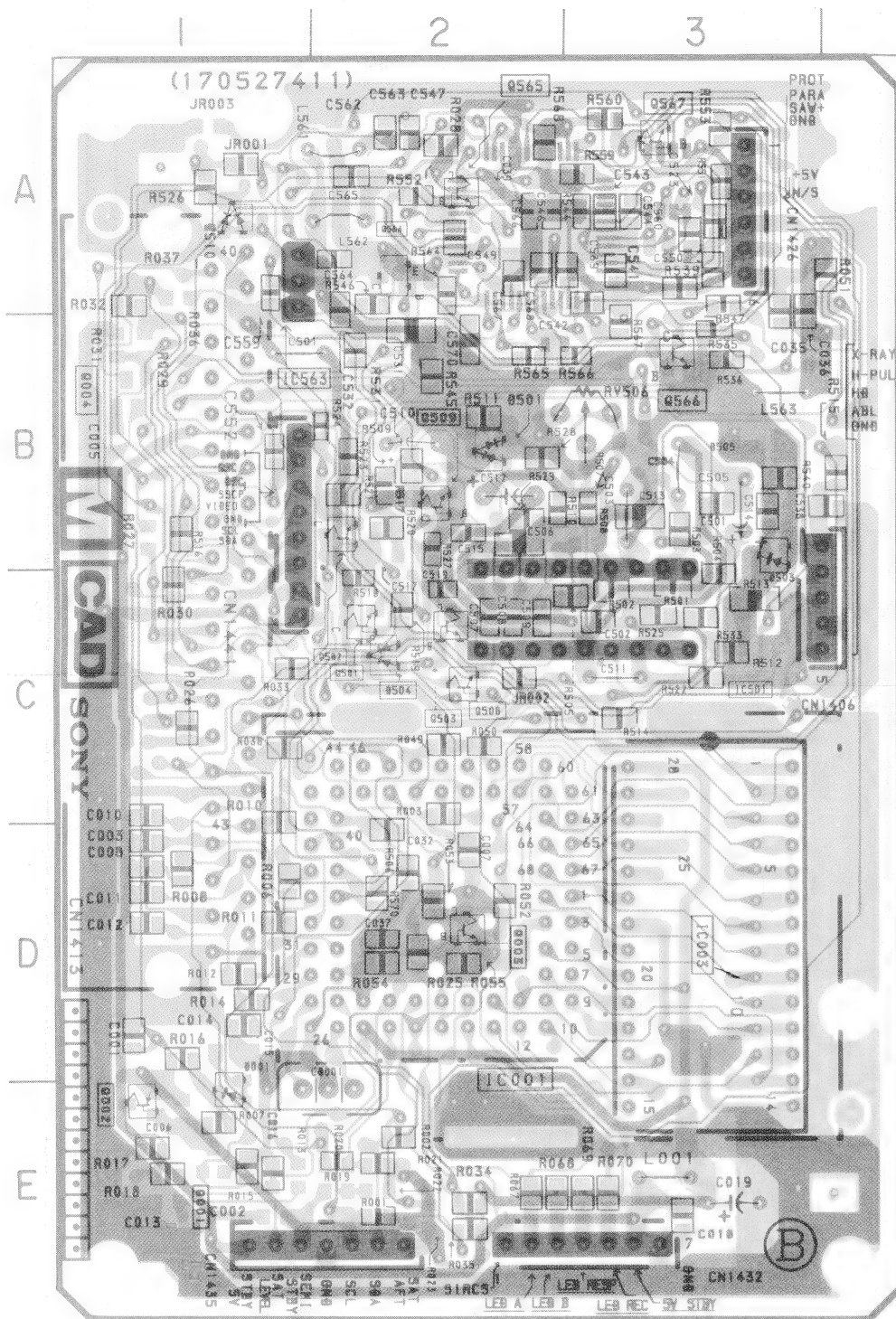




**M** [ MICRO CONTROLLER,  
GEOMETRIE CONTROLLER  
JUNGLE, H-DRIVE ]

**D** [ H/V OUT, PIN OUT,  
POWER SUPPLY ]

- M BOARD -



Note :

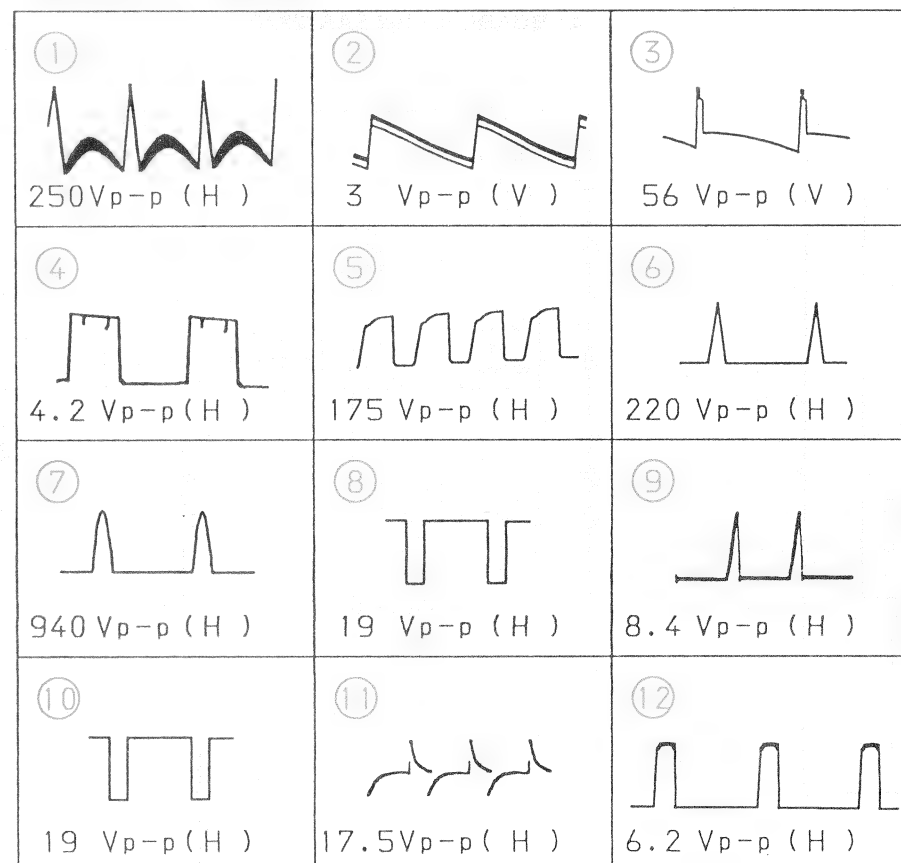
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

IC		DIODE	
IC001	D - 2	D001	E - 1
IC003	D - 3	D501	B - 1
IC501	C - 3	D503	B - 3
IC561	A - 6	D504	C - 2
IC562	A - 5	D510	A - 1
IC563	A - 1		

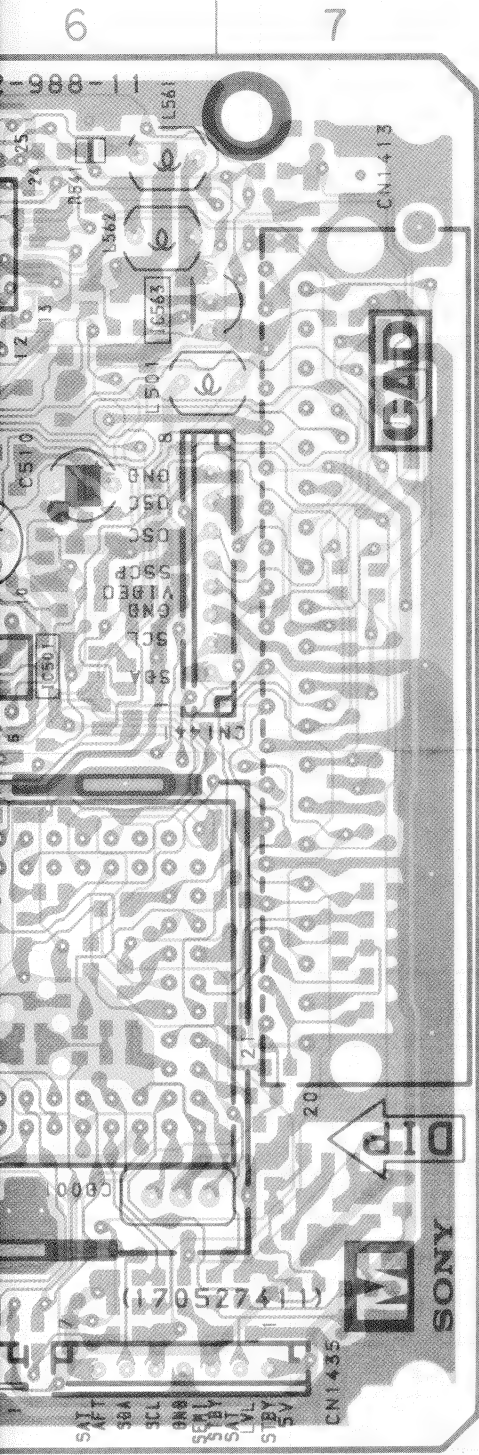
  

TRANSISTOR		VARIABLE RESISTOR	
Q002	E - 2	RV506	B - 3
Q003	D - 2		
Q501	C - 2		
Q502	B - 2		
Q503	C - 2		
Q508	C - 2		
Q509	B - 2		
Q564	A - 2		
Q565	A - 2		
Q566	B - 3		
Q567	A - 3		

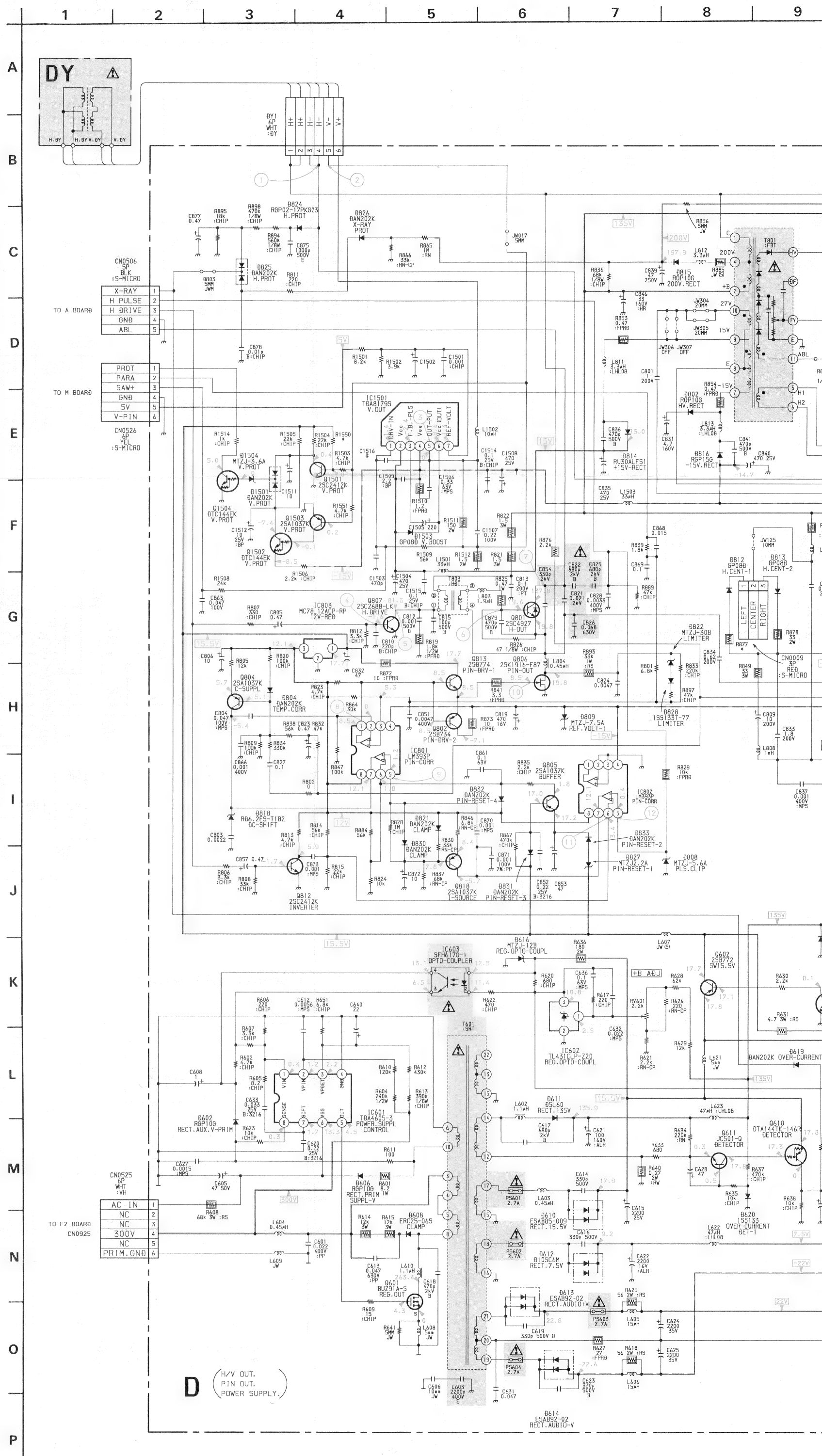
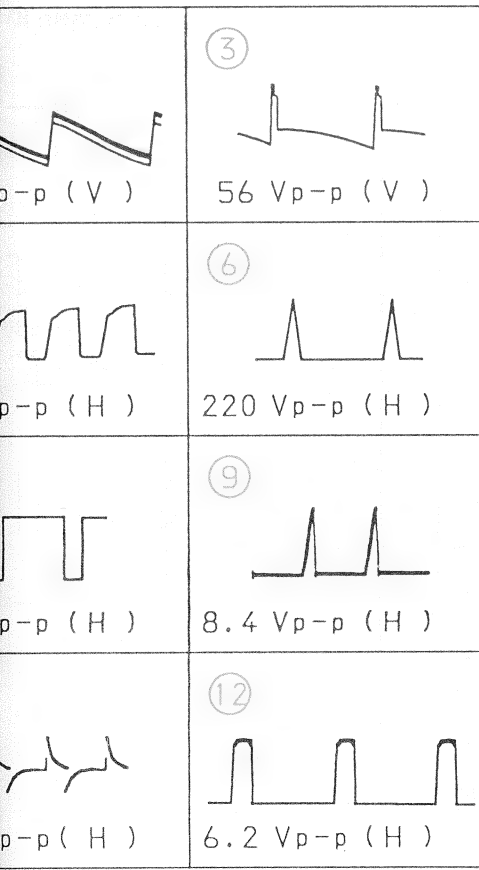
• WAVEFORMS D BOARD



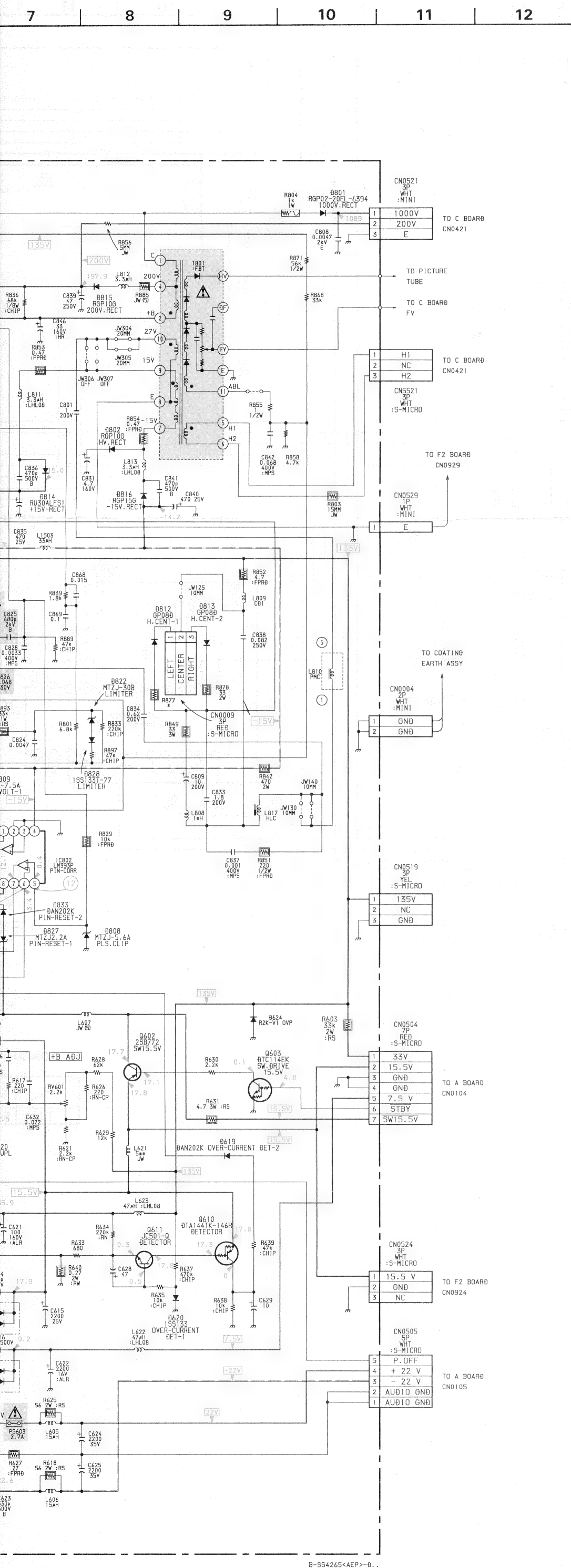




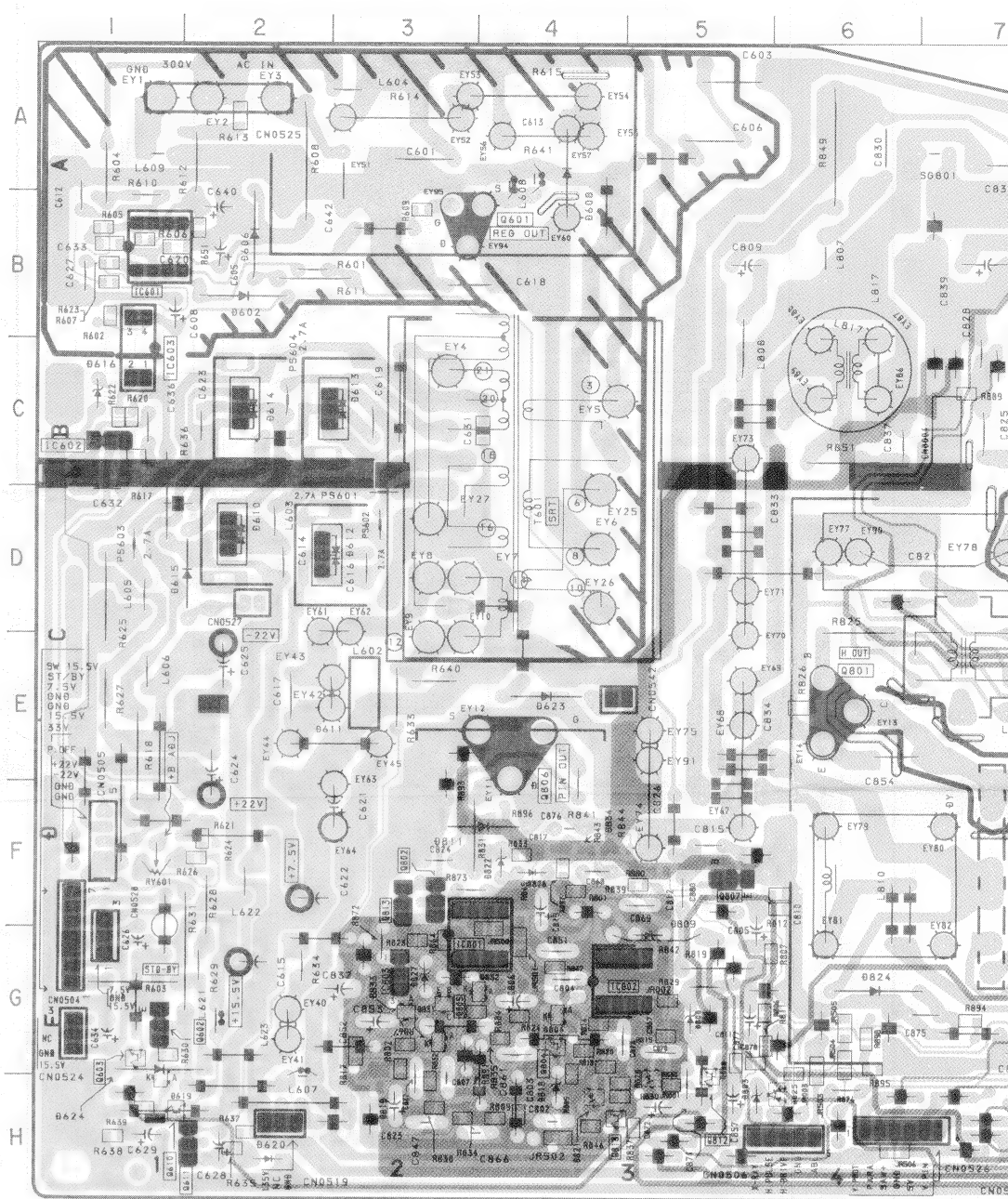
: Pattern from the side which enables seeing.  
 : Pattern of the rear side.







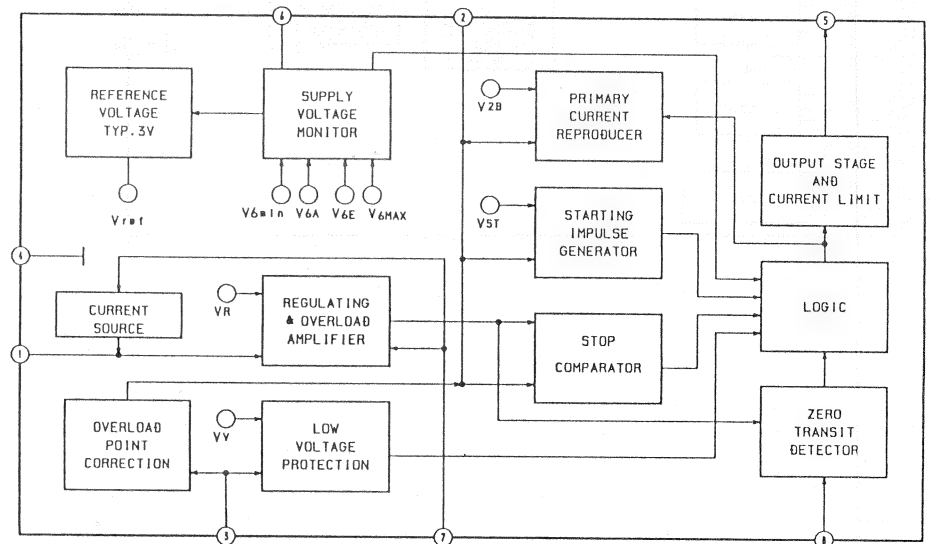
- D BOARD -



Note :


- Pattern from the side which enables seeing.
- Pattern of the rear side.

• D BOARD IC601 TDA4605-3

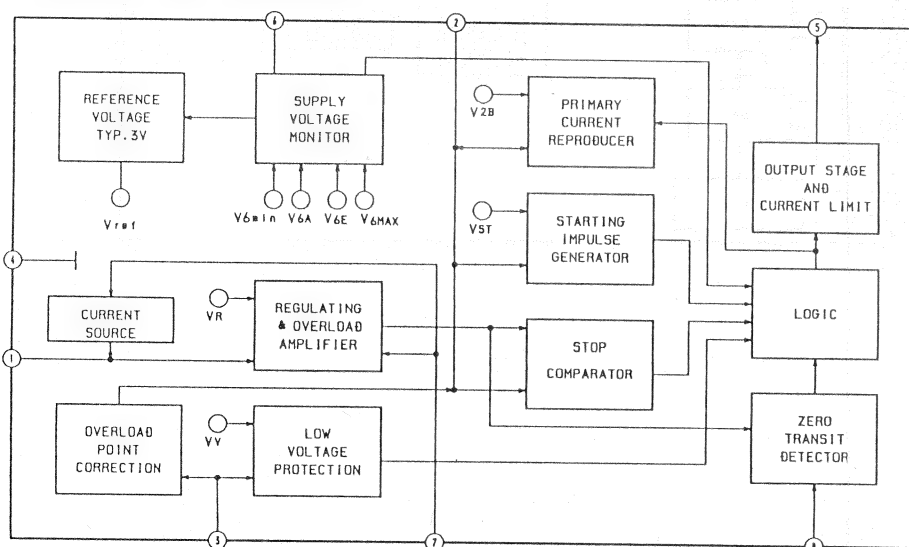






-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.

• D BOARD IC601 TDA4605-3

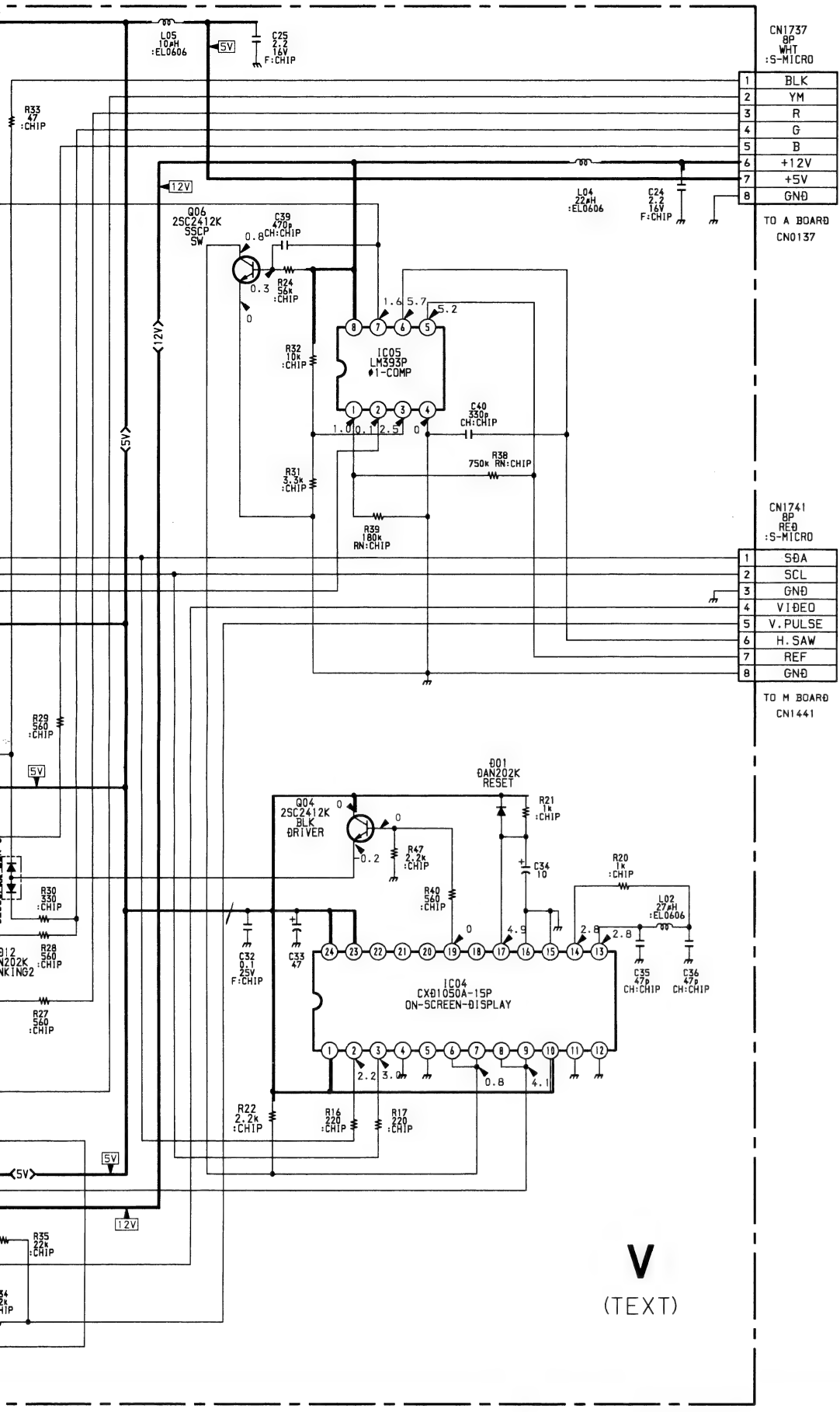






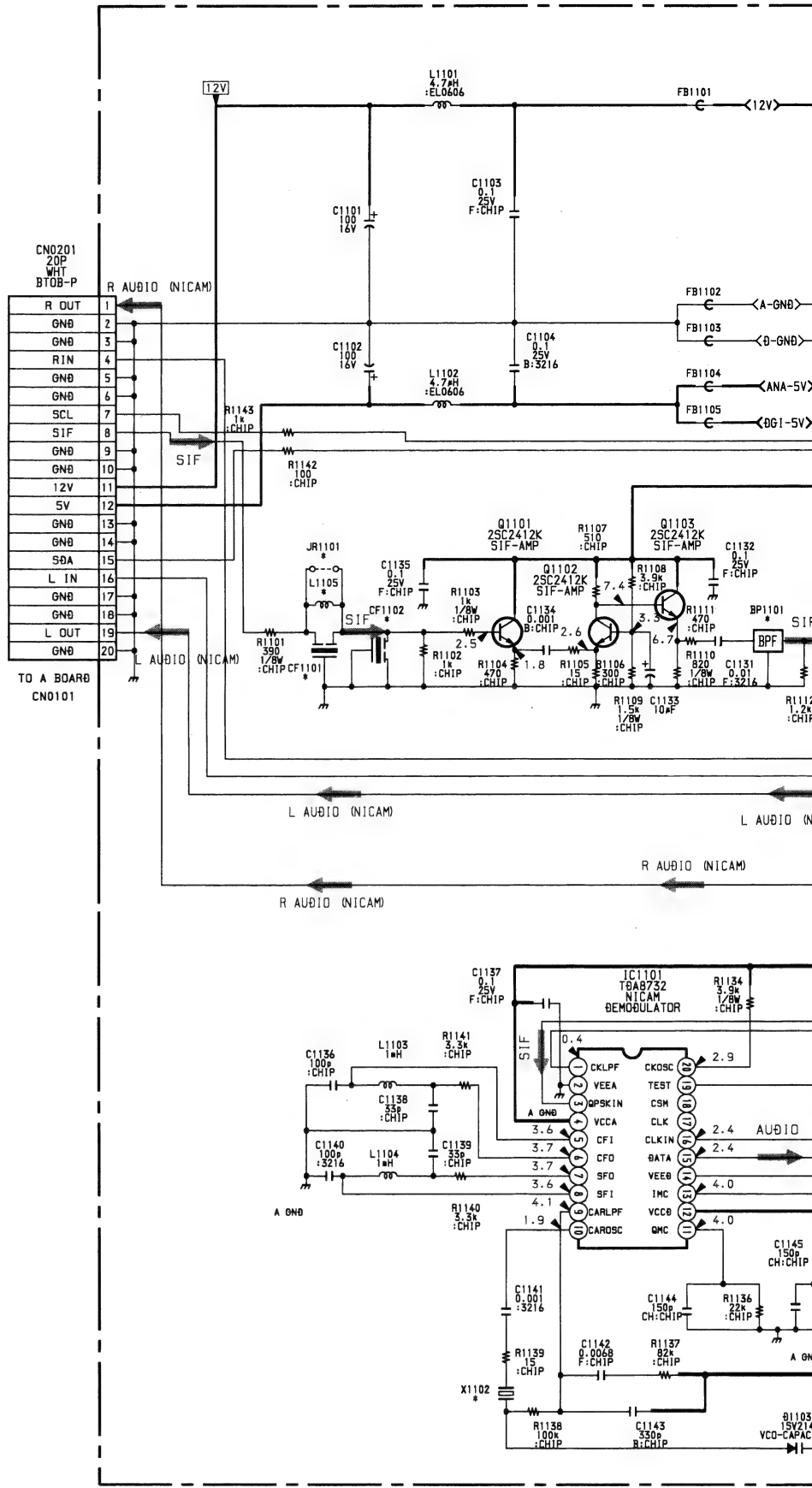


KV-B2512U/B2513E only

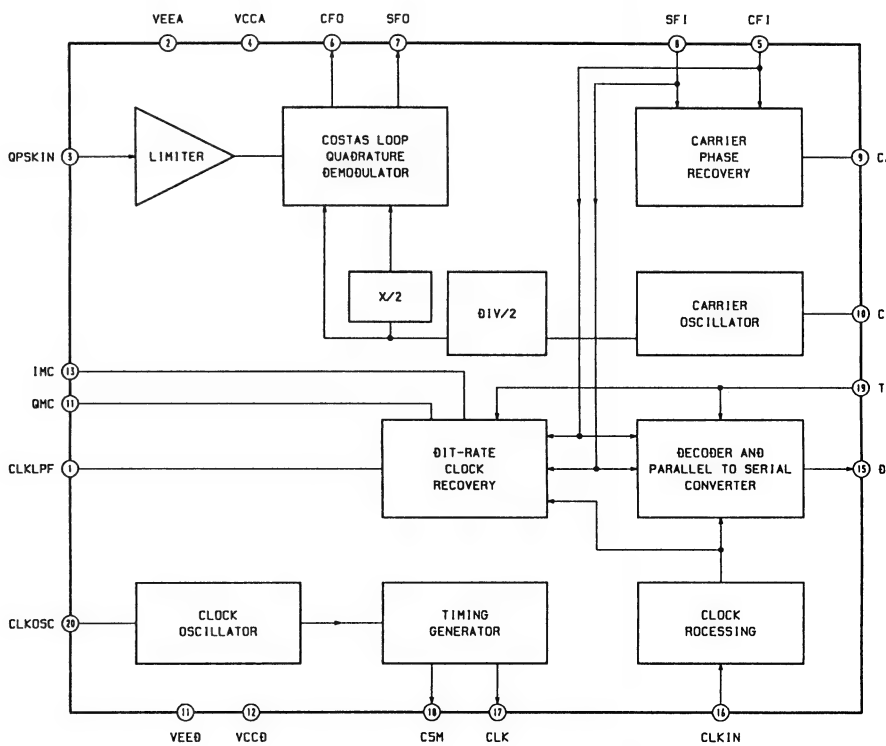


• V BOARD

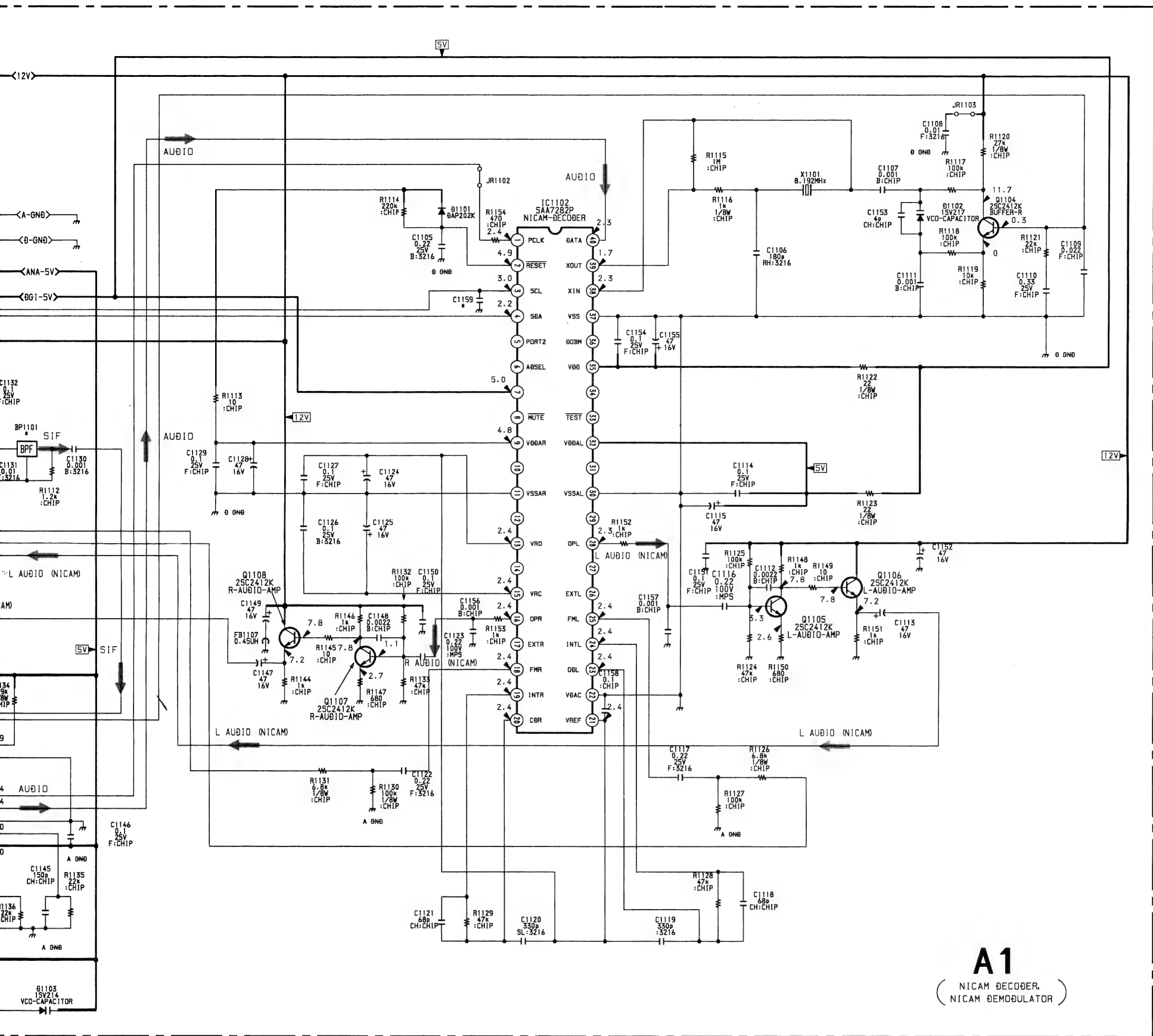
	KV-B2911K	OTHERS
IC01	S8A5248C2	S8A5248C1



• A1 BOARD IC1101 TDA8732

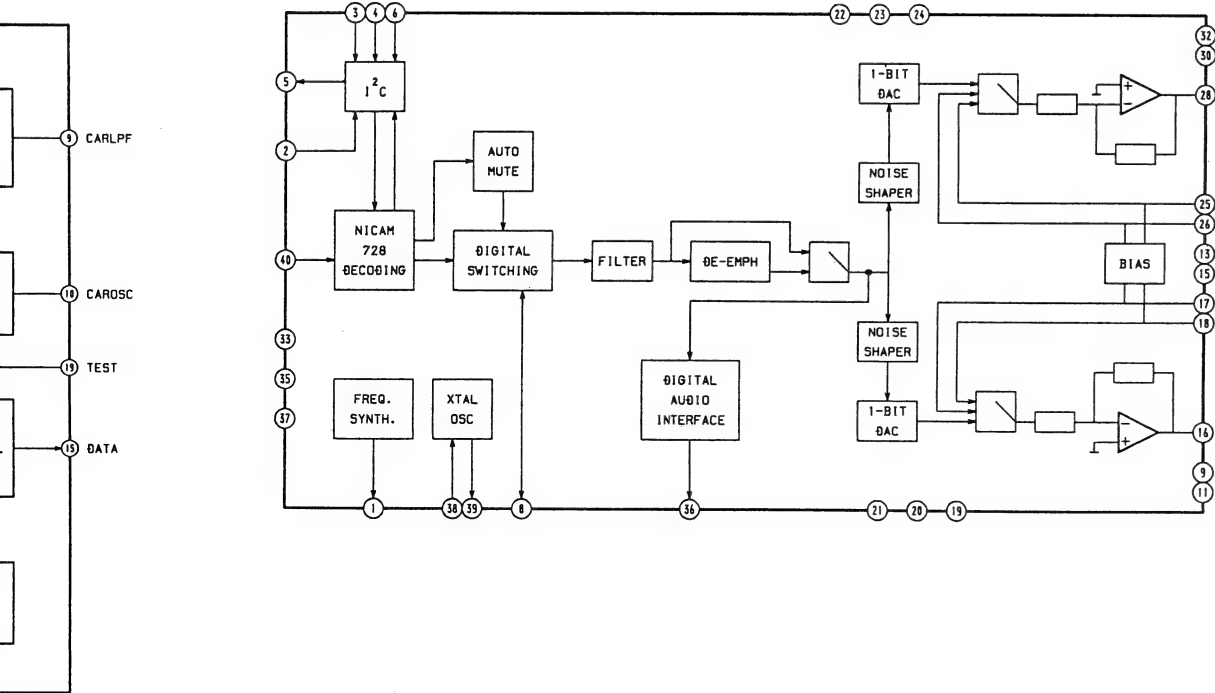






B-SS4260<AEP>-A1.

• A1 BOARD IC1102 SAA7282P



• A1 BOARD (KV-B2512U/B2513E only)

	KV-B2513E	KV-B2512U
BP1101	5.850MHz	6.552MHz
C1159	—	47P : CHIP
CF1101	—	6.0MHz
CF1102	5.5MHz	—
JR1101	0 : CHIP	—
L1105	—	15 μH
X1102	11.700MHz	13.104MHz



A1

[NICAM DECODER,  
NICAM DEMODULATOR]

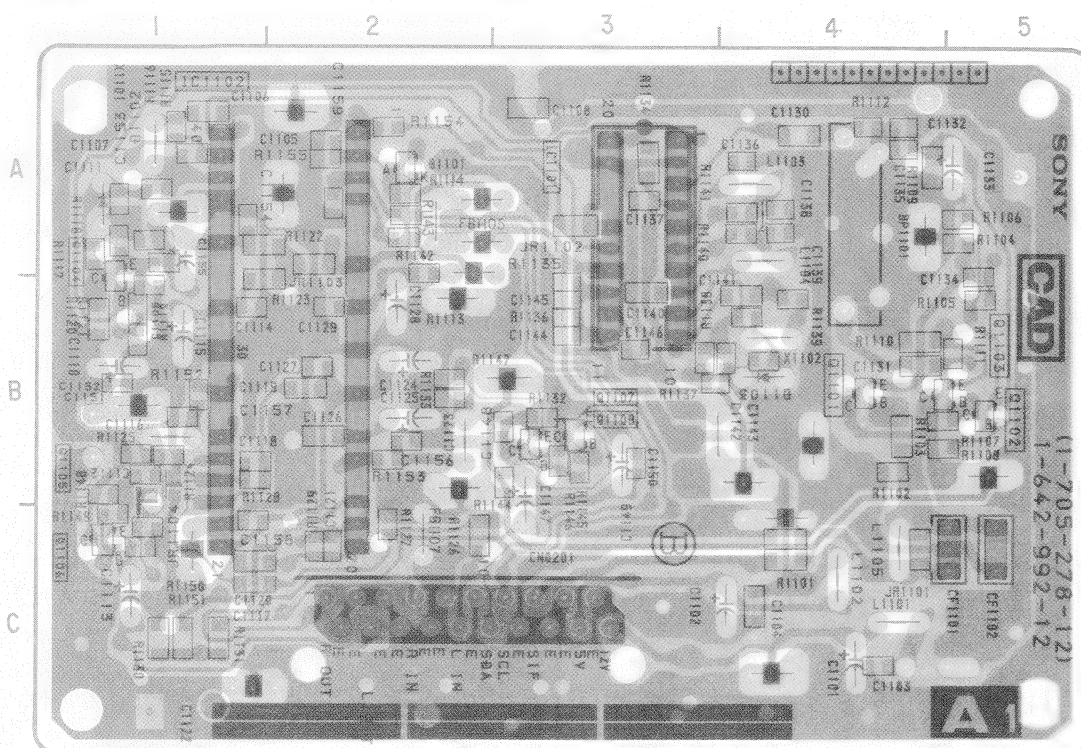
V

[TEXT]

C

[R. G. B OUT]

- A1 BOARD - (KV-B2512U/B2513E only)



Note:

- Pattern from the side which enables seeing.
- Pattern of the rear side.

## IC

IC1101 A-3  
IC1102 B-2

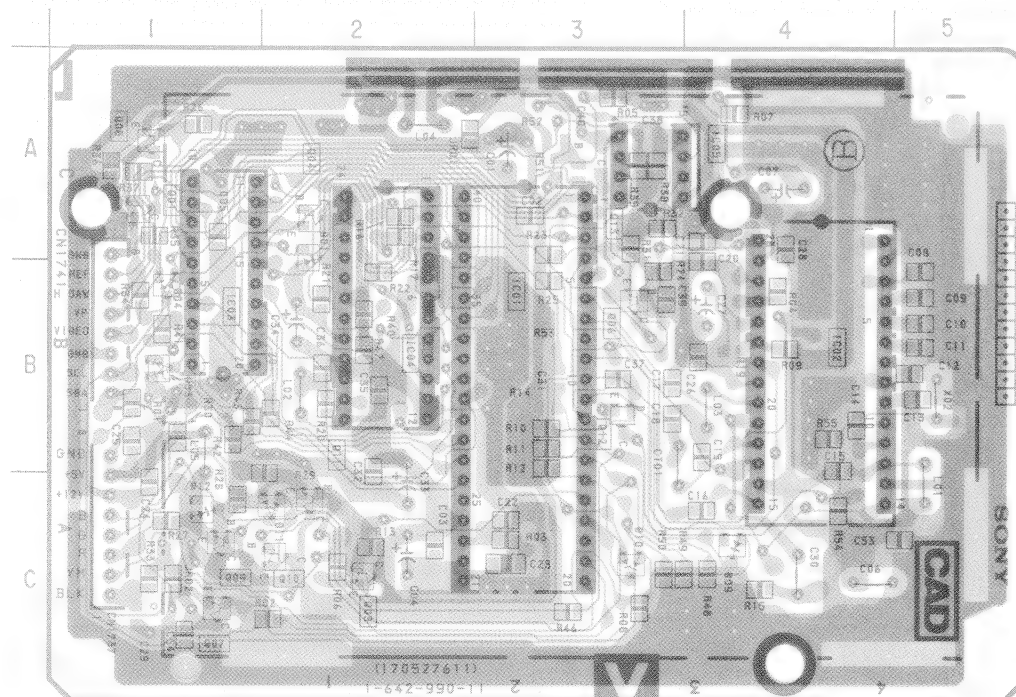
## TRANSISTOR

Q1101 B-4  
Q1102 B-5  
Q1103 B-5  
Q1104 A-1  
Q1105 B-1  
Q1106 C-1  
Q1107 B-3  
Q1108 B-3

## DIODE

D1101 A-2  
D1102 A-1  
D1103 B-4

- V BOARD -



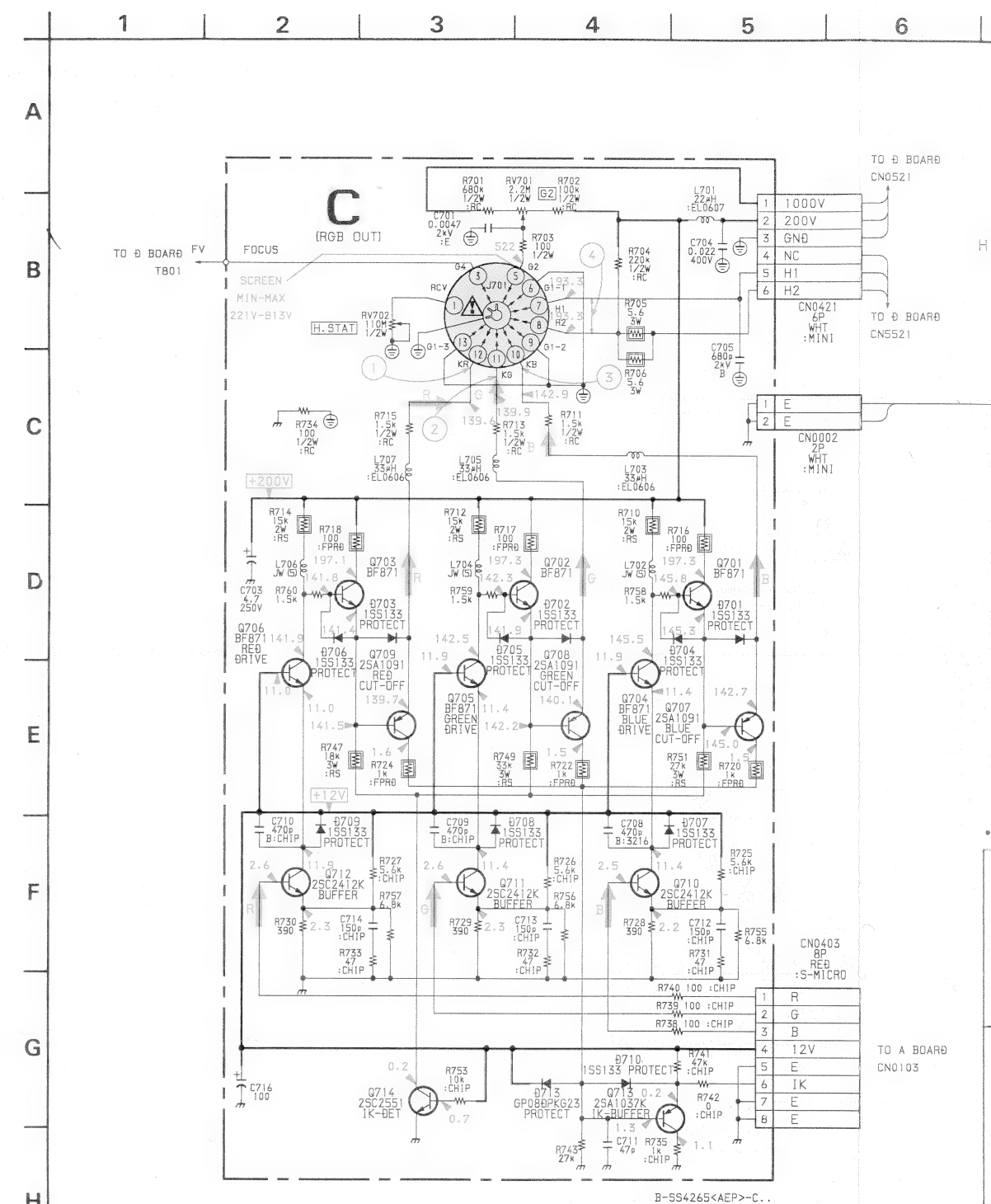
## IC

Q08 A-1  
Q09 C-1  
Q010 C-2  
Q011 C-2  
Q012 C-3

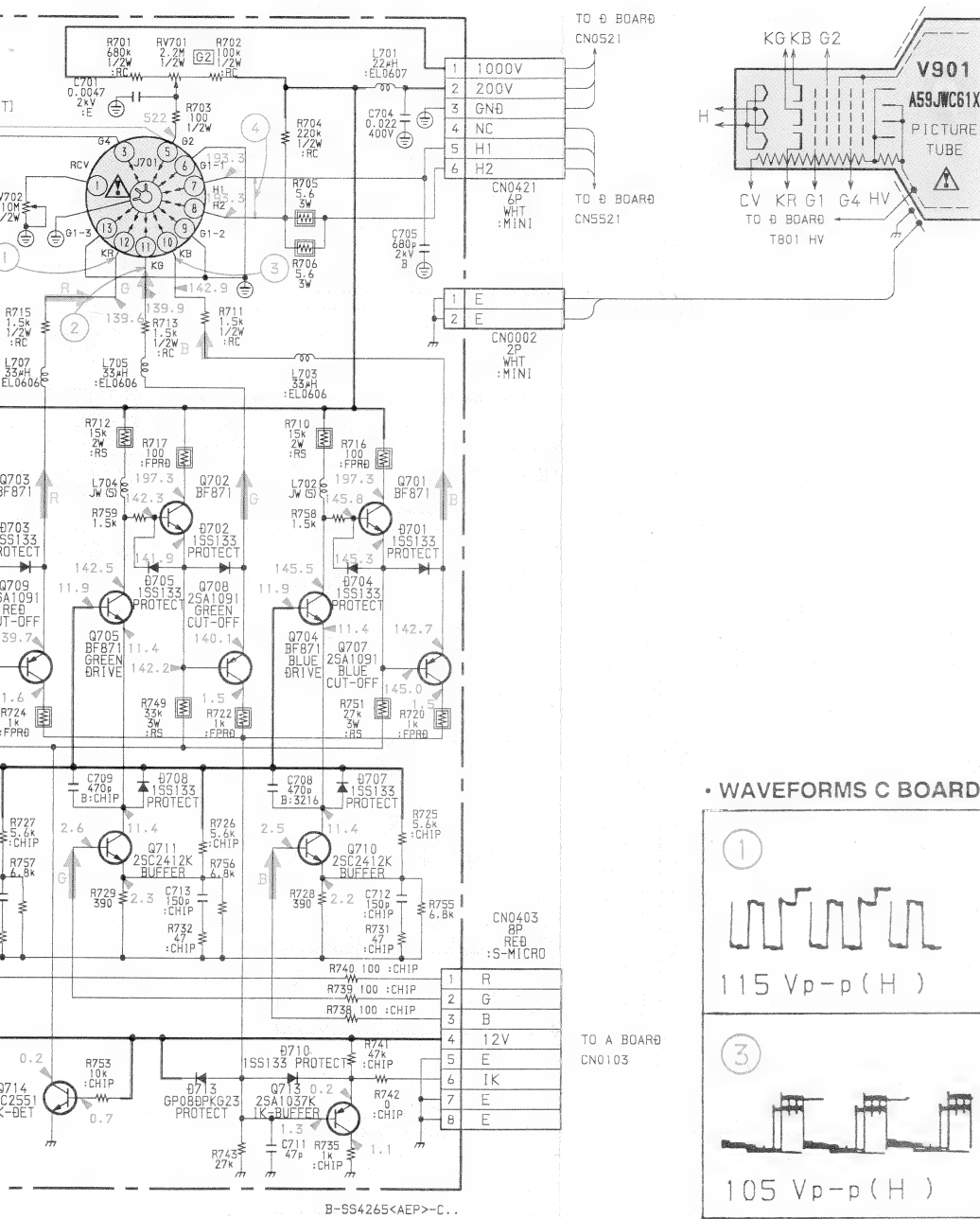
## DIODE

## TRANSISTOR

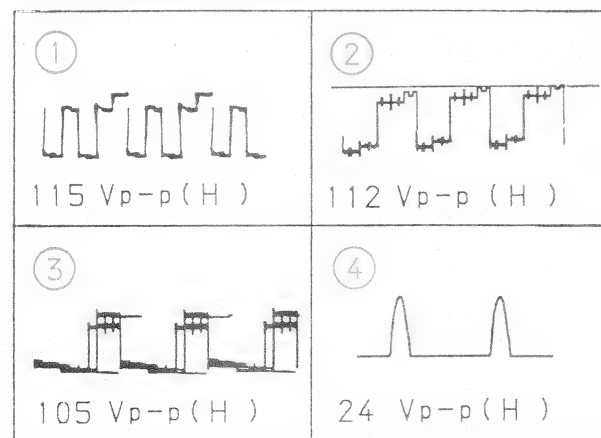
Q01 A-1  
Q03 C-2  
Q04 B-2  
Q06 B-3  
Q07 C-1  
D01 B-2  
D03 B-1  
D04 B-1  
D09 C-4  
D010 C-3  
D011 C-2  
D012 C-1



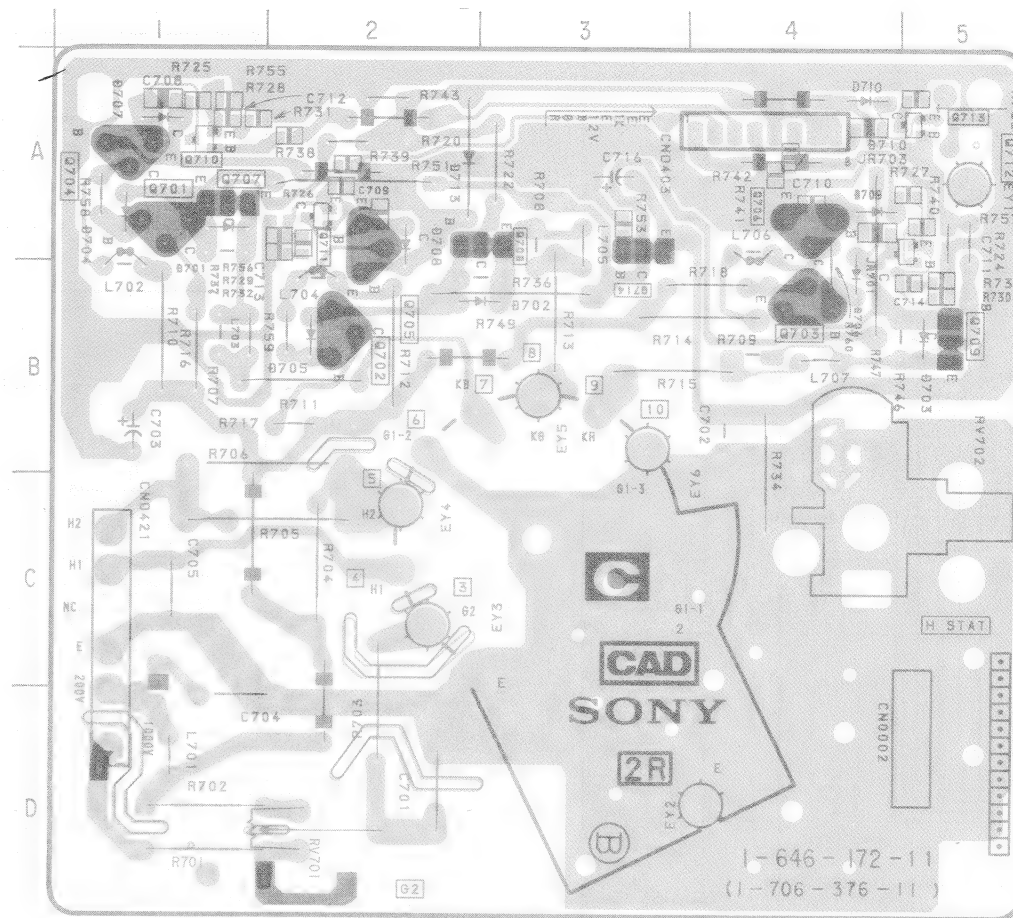




• WAVEFORMS C BOARD



— C BOARD —



# TRANSISTOR

Q701	A - 1
Q702	B - 2
Q703	B - 4
Q704	A - 1
Q705	B - 2
Q706	A - 4
Q707	A - 1
Q708	A - 3
Q709	B - 5
Q710	A - 1
Q711	A - 2
Q712	A - 5
Q713	A - 5
Q714	A - 3

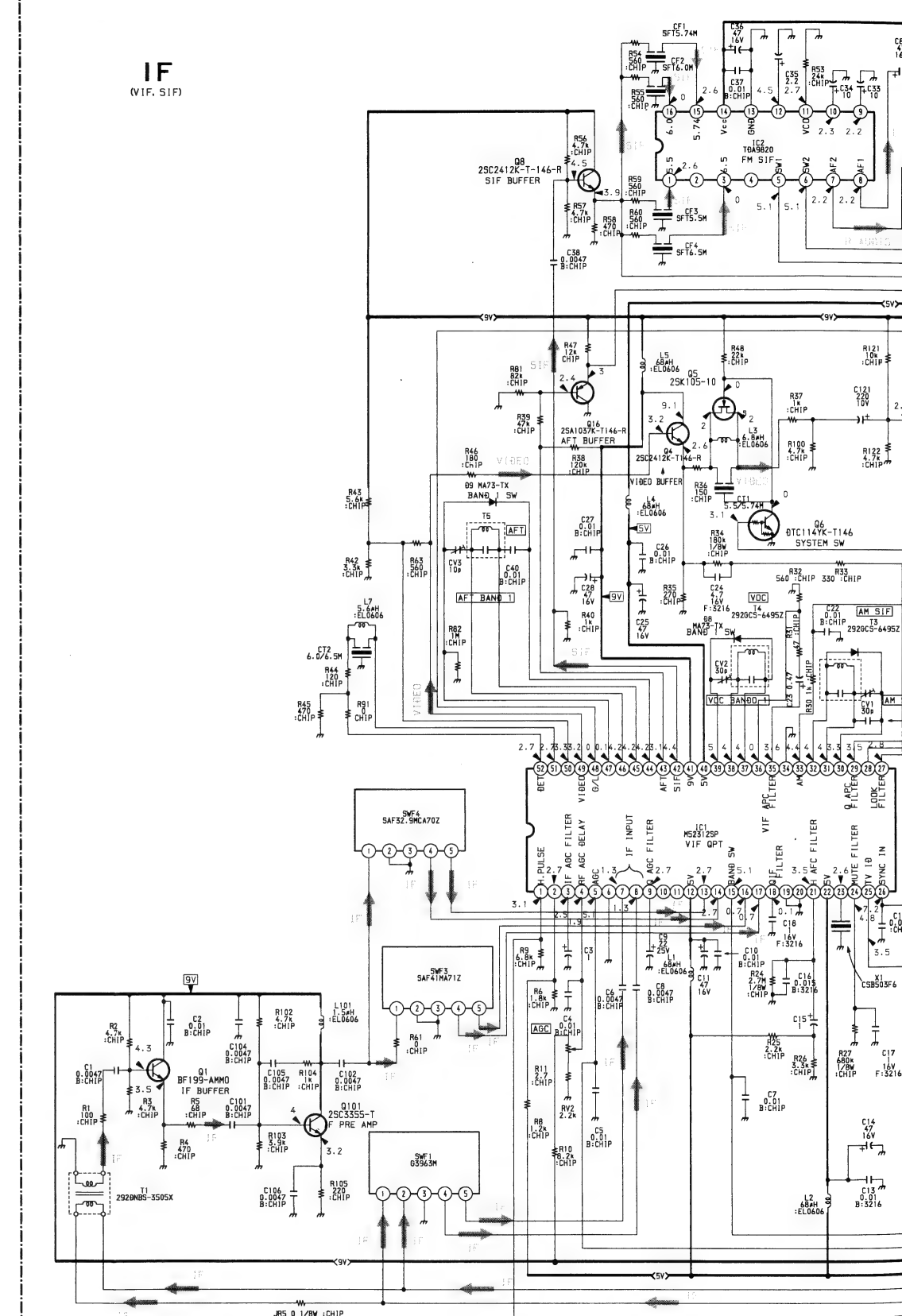
## DIODE

D701	A - 1
D702	B - 3
D703	B - 5
D704	A - 1
D705	B - 2
D706	B - 4
D707	A - 1
D708	A - 2
D709	A - 4
D710	A - 4
D713	A - 2

VARIABLE  
RESISTOR

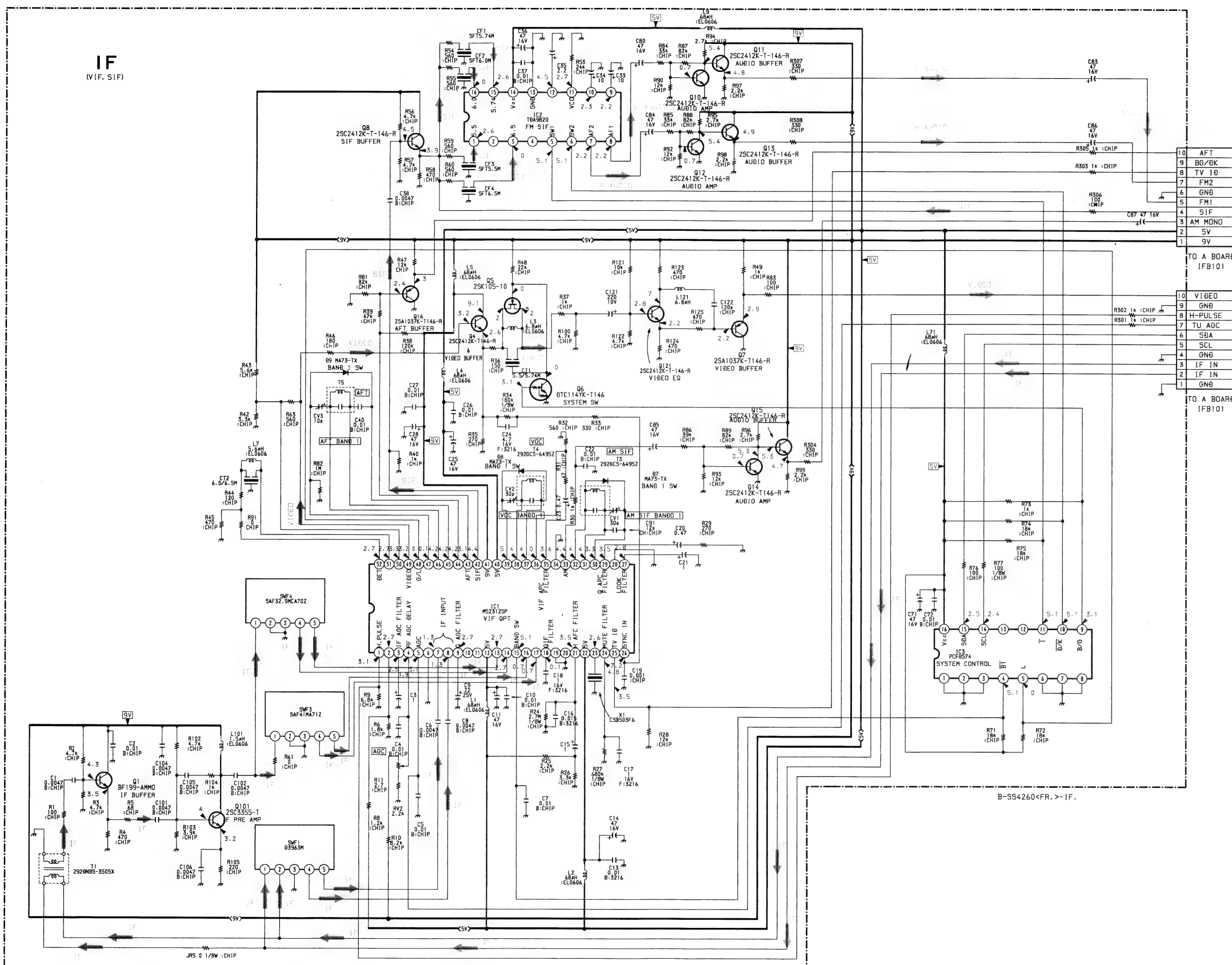
RV701	D - 2
RV702	C - 4



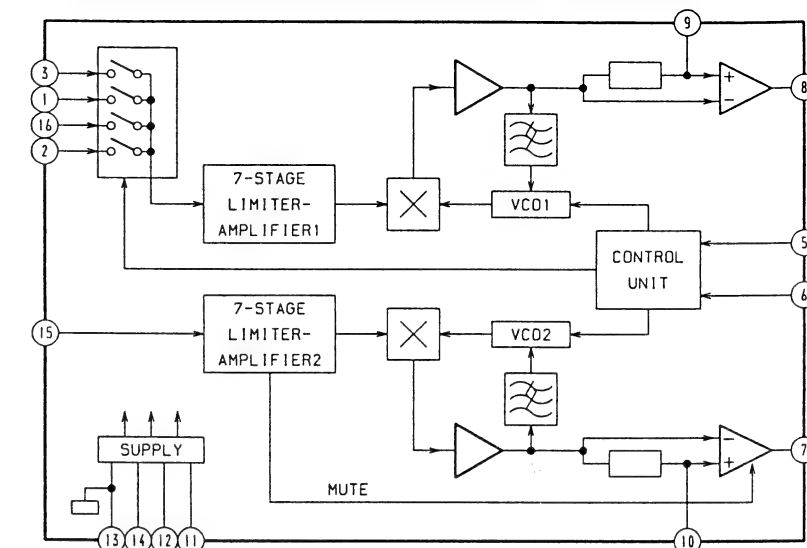
**IFH389S (KV-B2511B only)**



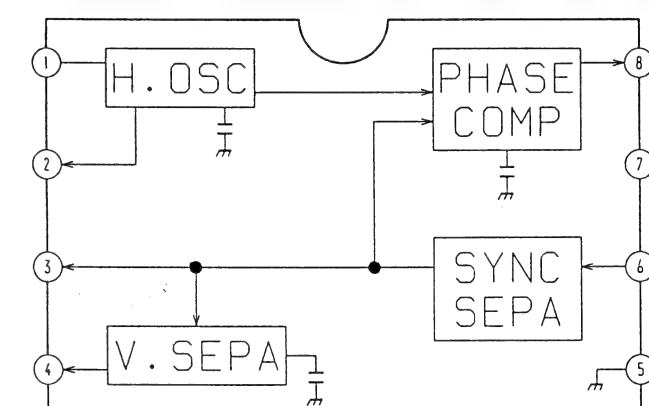
### IFH389S (KV-B2511B only)



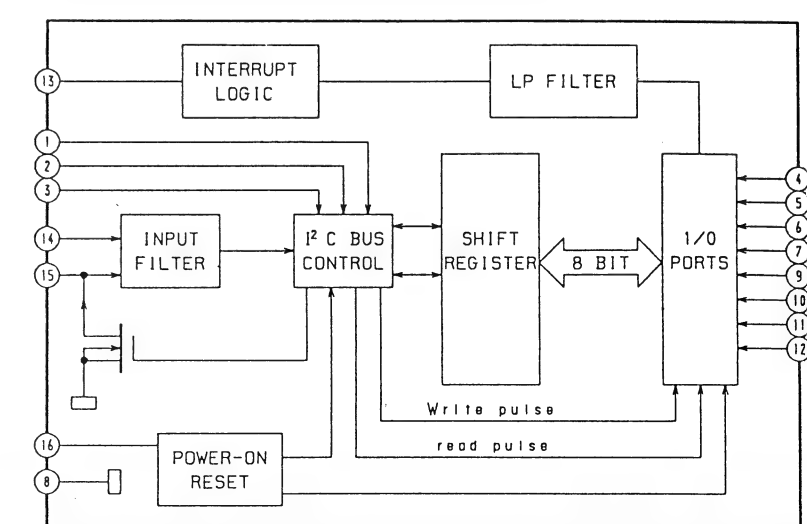
- IF BOARD IC2 TDA9820 (KV-B2511A/B2511D/B2513E/B2511K)



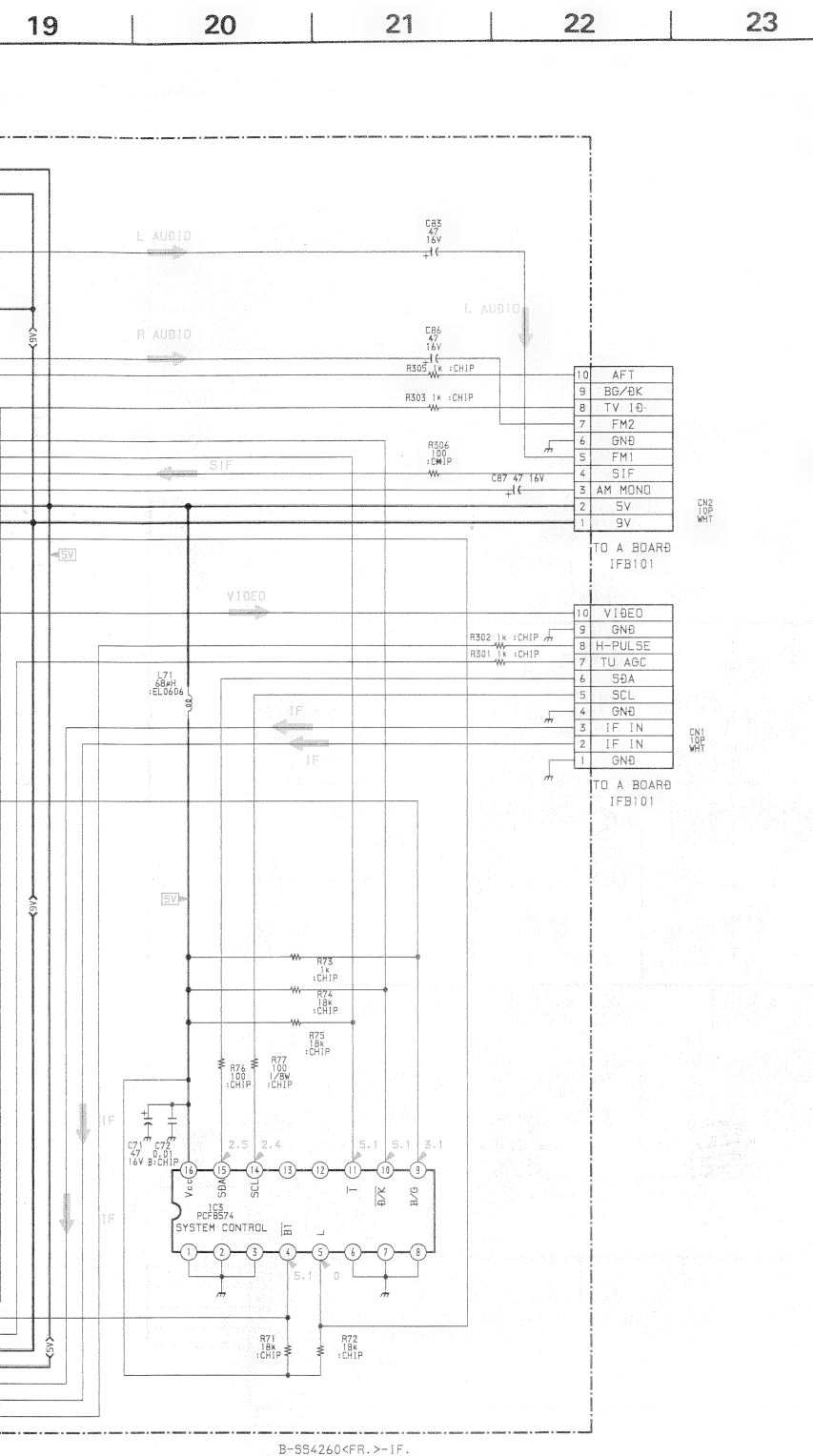
- IF BOARD IC3 BA7046 (KV-B2511A/B2511D/B2513E/B2511K)



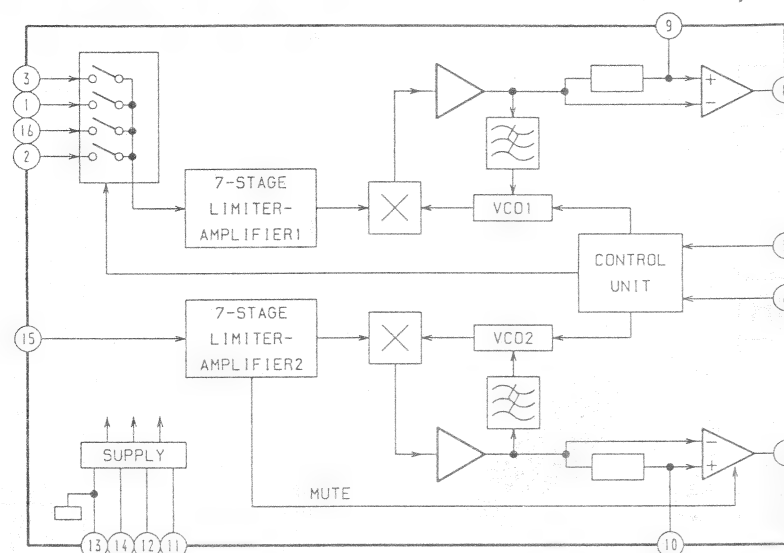
• IF BOARD IC3 PCF8574 (KV-B2511B only)



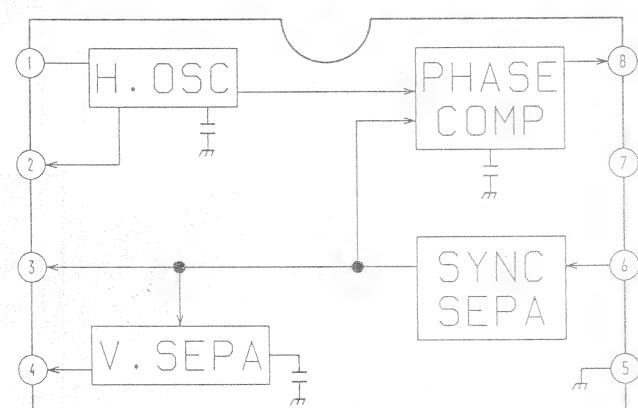




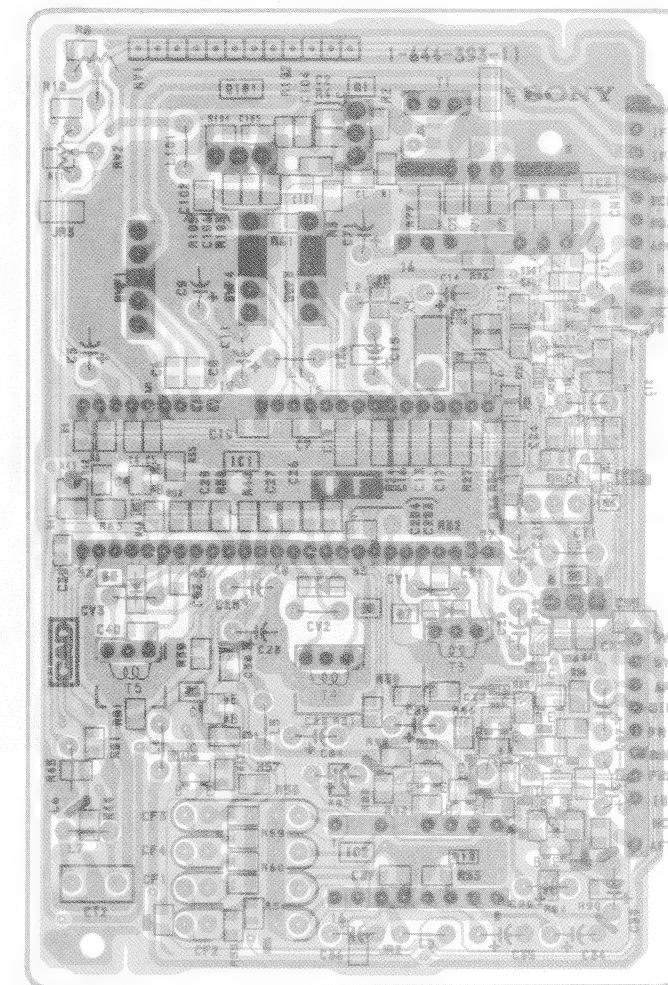
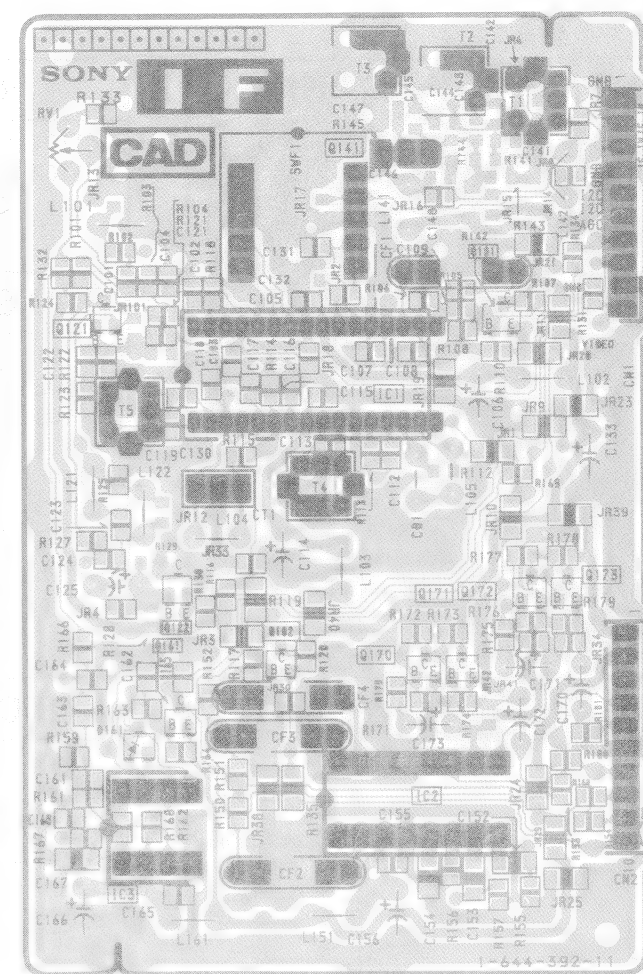
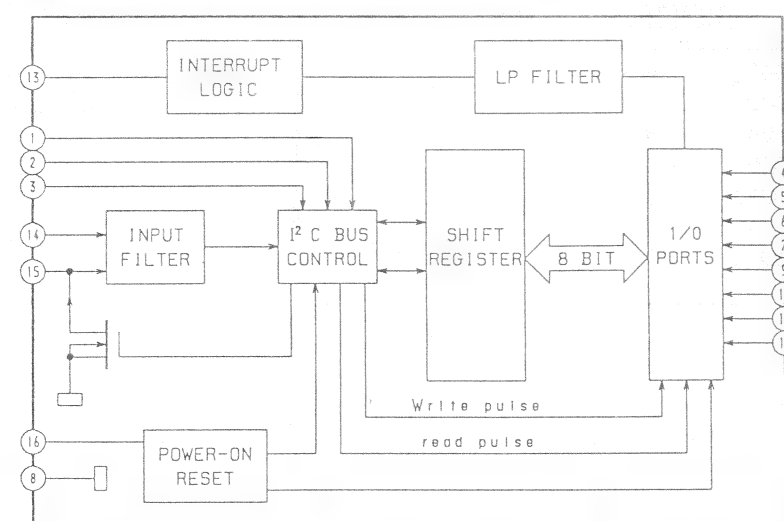
• IF BOARD IC2 TDA9820 (KV-B2511A/B2511D/B2513E/B2511K)



• IF BOARD IC3 BA7046 (KV-B2511A/B2511D/B2513E/B2511K)



• IF BOARD IC3 PCF8574 (KV-B2511B only)

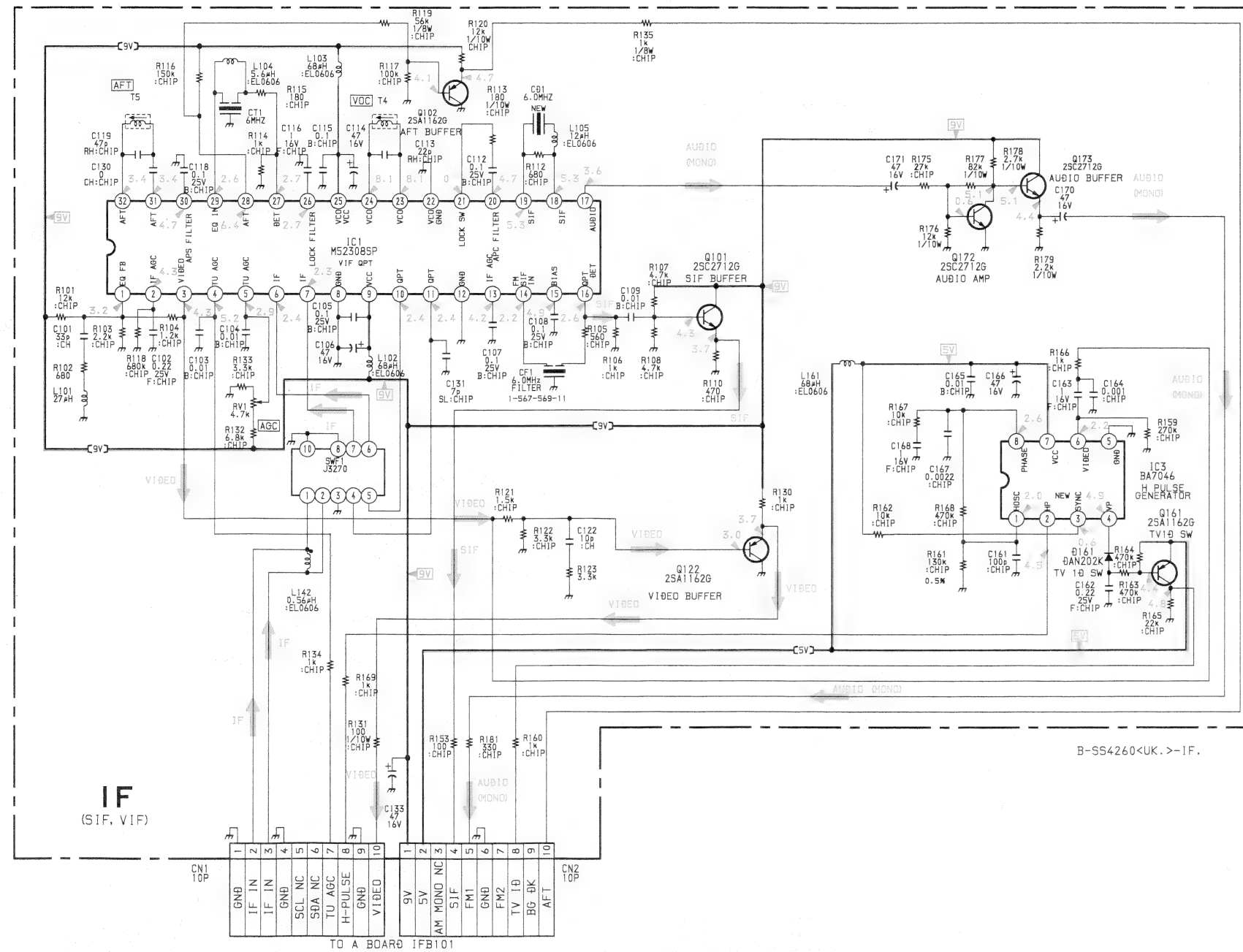


Note :

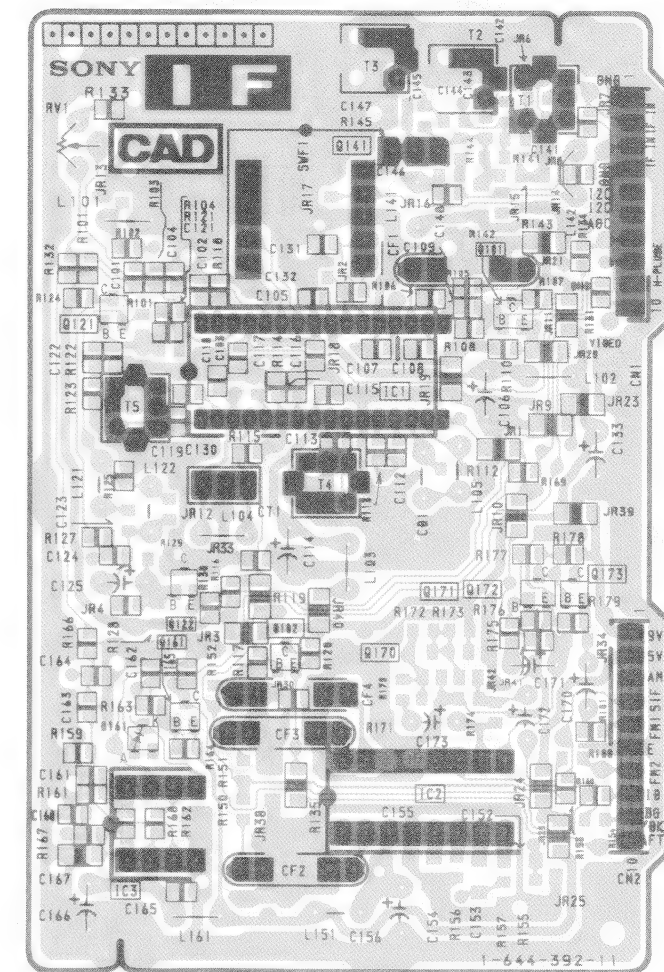
-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.



## IFH395 (KV-B2512U only)



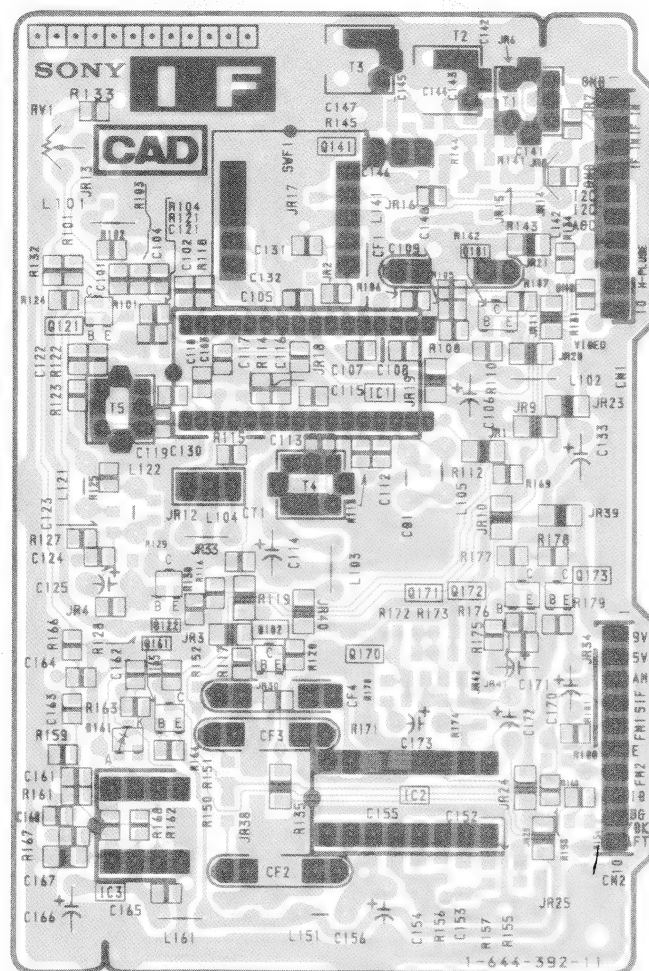
## - IF BOARD - (KV-B2512U only)



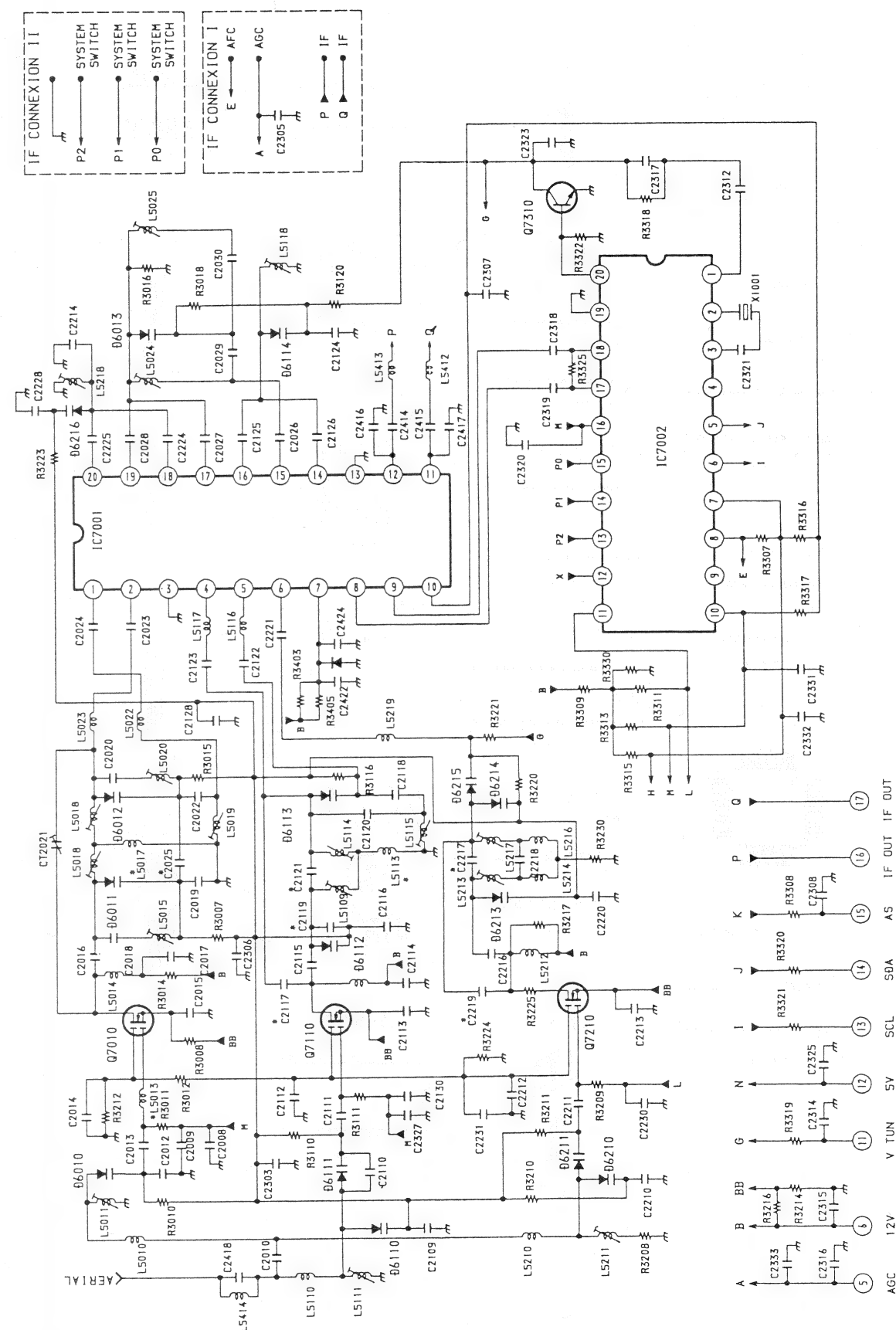




– IF BOARD – (KV-B2512U only)



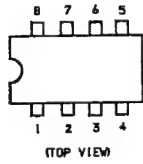
### 5-5. SCHEMATIC DIAGRAM OF TUNER A BOARD TU101 UV916H



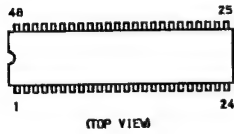


5-6. SEMICONDUCTORS

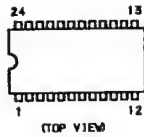
BA7046  
LM358D  
LM393P  
TDA2822-M  
TDA4605-3  
TEA2114  
X24C16P



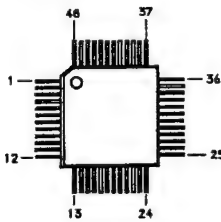
CXA1545AS  
CXA1587S



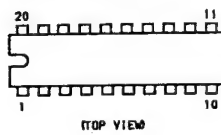
CXD1050A-15P  
TDA9145/N1



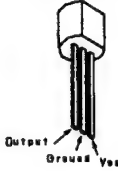
CXD2018Q



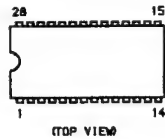
MCM514256AP80  
TDA8732



MC78L05ACPRP  
MC78L12ACPRP



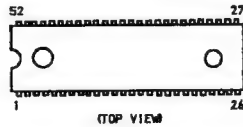
M27C512-20B1-AE27  
SDA5231-2  
TDA6612  
TDA6622



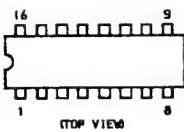
M52308SP



M52312SP



PCF8574  
TDA9820



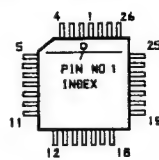
RC7809FA



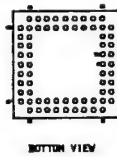
SAA7282P  
SDA5248C1



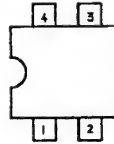
SBX1610-11



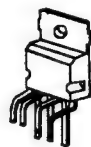
SDA30C162



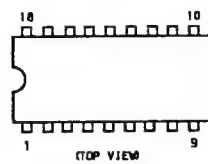
SFH617G-1



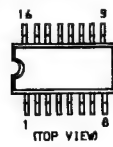
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TDA8138A  
TDA8179S



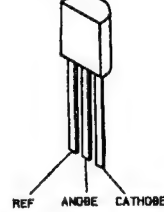
TDA2595/V9



TDA4660V2



TL431CLP



BF199-AMMO



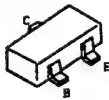
BF871



BUZ91A-E3155



DA116-T146  
DTA124EK  
DTA144EK  
DTA144TK  
DTC114EK  
DTC124EK  
DTC144EK  
2SA1162-G  
2SC1623-L5L6  
2SC2413KQ



2SA1306A-Y  
2SC3298B-Y



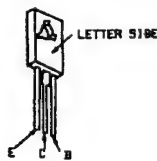
2SA733K  
2SA1091-0  
2SC2551-0



2SB734-34  
2SD774-34



2SB772-Q  
2SC2688-LK



2SC2785



2SC492



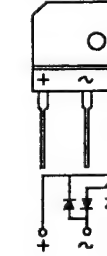
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D105C6

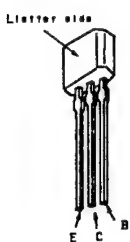


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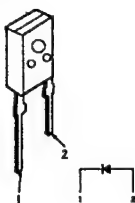




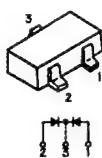
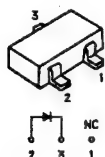
2SC2785-HFE



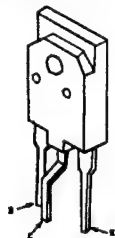
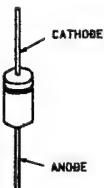
Ø5L60



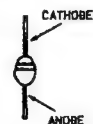
MA152WK


 MA3039H-TX  
 MA3047L-TX  
 RØ5.6M-B2


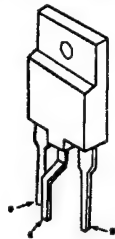
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 EGP20G  
 RGP02-17  
 RGP02-20EL-6394  
 RU-3AM  
 RU-30ALFS1  
 R2K


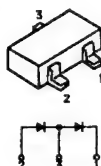
U05G



2SK1916-53-F50


 ESAB92-02  
 ESB85-009

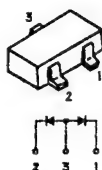

15S226



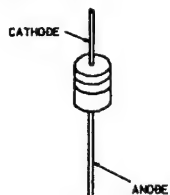
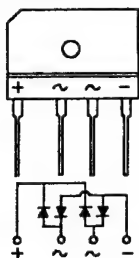
Ø10SC6M


 HZS3.6NB1TØ  
 MTZJ-13C  
 MTZJ-3.3  
 MTZJ-9.1  
 MTZJ-30B  
 MTZJ-33C  
 MTZJ-39C  
 MTZJ-T-72-2.2A  
 RØ12ES-B2  
 RØ5.6ES-B1  
 RØ5.6ES-B2  
 RØ6.2ES-B2  
 RØ7.5ES-B2  
 15S119

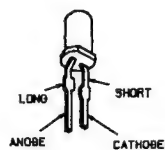
152836



Ø45B60L-F



LØ-201VR







## SECTION 6 EXPLODED VIEWS

## NOTE:

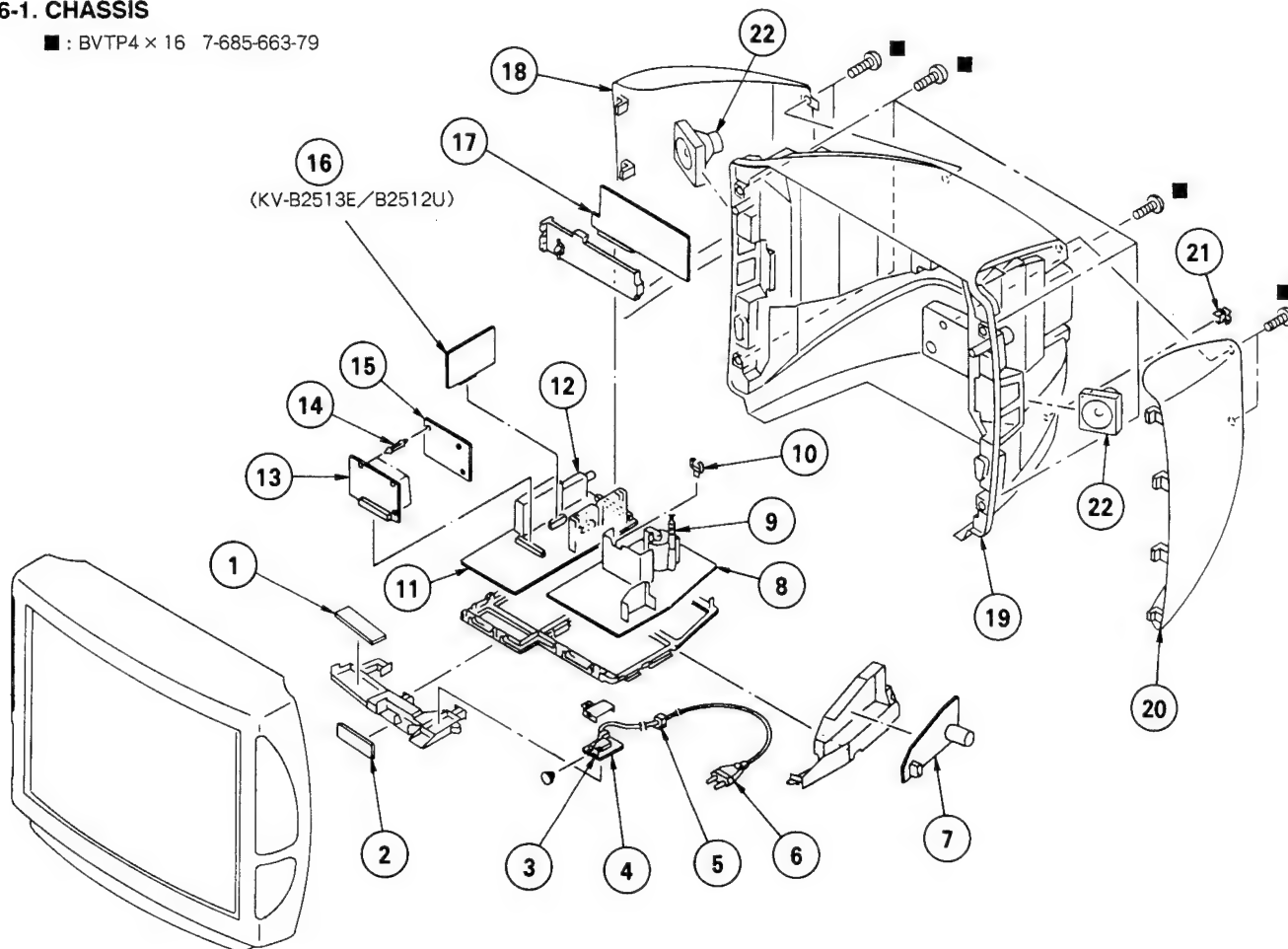
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.







The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## 6-1. CHASSIS

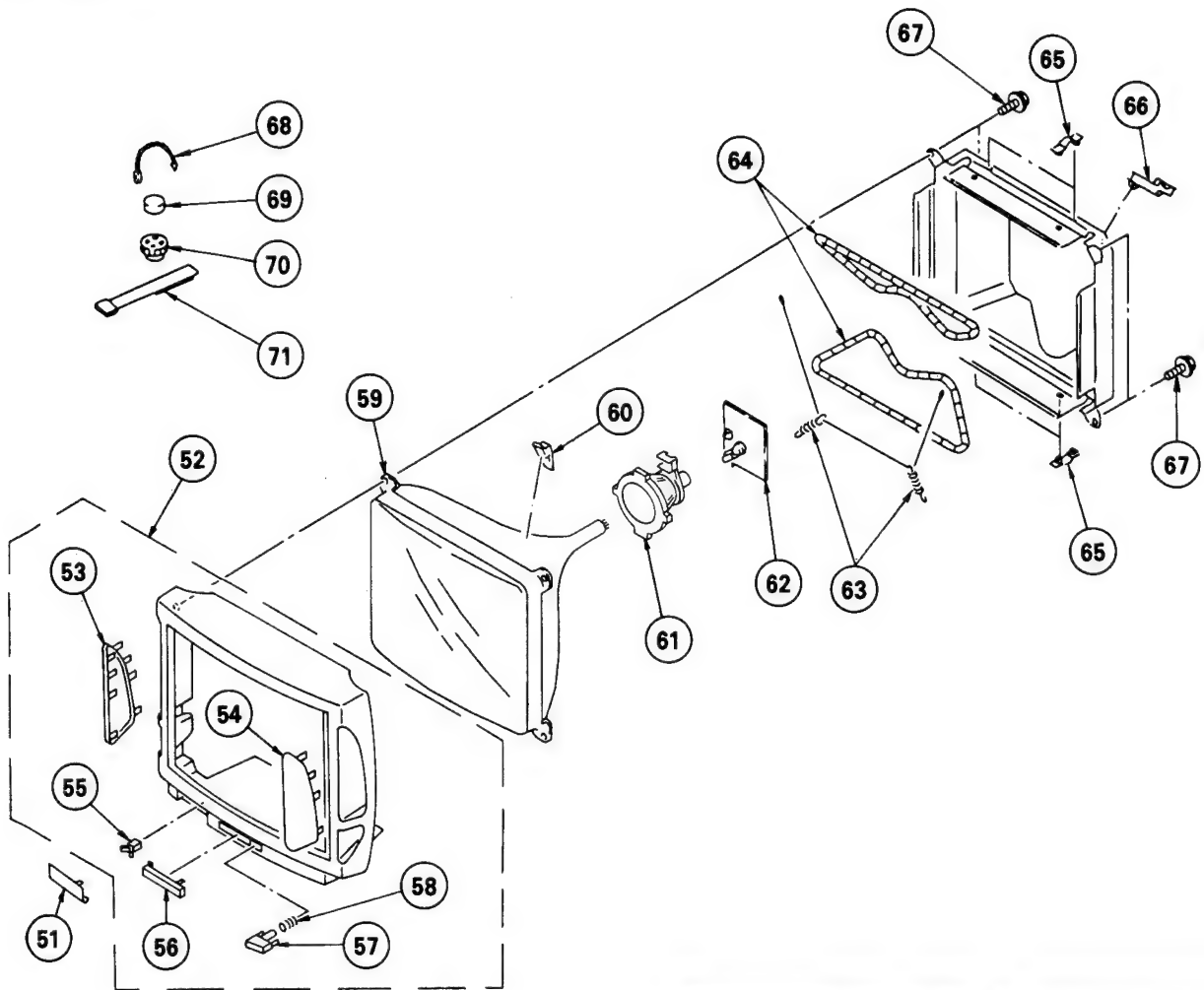
■: BVTP4 × 16 7-685-663-79



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
1	*1-643-004-11	H1 BOARD		12	1-693-185-11	TUNER (UV916H)	
2	*1-642-997-11	H2 BOARD			1-693-184-11	TUNER (U944C) (KV-B2512U)	
3	 1-571-433-12	SWITCH, PUSH (AC POWER)		13	*A-1635-001-A	M BOARD, COMPLETE	
4	*A-1624-013-A	F1 BOARD, COMPLETE		14	*4-385-948-01	HOLDER, PCB	
5	 4-389-201-11	HOLDER, AC CORD		15	*A-1645-024-A	V BOARD, COMPLETE	
6	 1-690-296-11	CORD, POWER (WITH NOISE FILTER)		16	*A-1630-130-A	A1 BOARD, COMPLETE (KV-B2512U)	
		(KV-B2511A, B2511B, B2511D, B2511K, B2513E)			*A-1630-126-A	A1 BOARD, COMPLETE (KV-B2513E)	
	 1-590-762-11	CORD, POWER (WITH PLUG) (KV-B2512U)		17	*A-1651-040-A	J BOARD, COMPLETE	
7	*A-1624-014-A	F2 BOARD, COMPLETE		18	4-039-255-01	COVER (LEFT), SPEAKER	
8	*A-1642-089-A	D BOARD, COMPLETE		19	4-039-259-01	COVER, REAR	
9	 1-453-118-11	TRANSFORMER ASSY, FLYBACK (UX-2600A2)		20	4-039-260-01	COVER (RIGHT), SPEAKER	
10	*3-646-071-00	HOLDER, WIRE		21	 4-038-615-11	HOLDER, AC CORD	
11	*A-1632-106-A	A BOARD, COMPLETE		22	0-550-040-01	SPEAKER	
		(KV-B2511A, B2511D, B2511K)					
	*A-1632-113-A	A BOARD, COMPLETE (KV-B2511B)					
	*A-1632-117-A	A BOARD, COMPLETE (KV-B2512U)					
	*A-1632-114-A	A BOARD, COMPLETE (KV-B2513E)					



## 6-2. PICTURE TUBE



The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
51	4-039-244-01	DOOR (KV-B2511A,B2511B,B2511D,B2511K)		60	3-704-495-01	SPACER, DY	
	4-039-244-11	DOOR (KV-B2512U,B2513E)		61	$\Delta$ 1-451-311-21	DEFLECTION YOKE (Y25FXA)	
52	X-4030-924-1	CABINET ASSY (WITH BEZEL ASSY) 53-58		62	*A-1638-030-A	C BOARD, COMPLETE	
	X-4030-924-2	CABINET ASSY (WITH BEZEL ASSY) 53-58 (KV-B2512U)		63	4-303-774-11	SPRING, GROUND WIRE	
53	4-039-249-01	GRILLE (LEFT), SPEAKER		64	$\Delta$ 1-402-746-21	COIL, DEGAUSSING	
54	4-039-250-01	GRILLE (RIGHT), SPEAKER		65	*4-385-916-01	HOLDER (D)	
55	4-392-036-01	CATCHER, PUSH		66	*4-387-284-01	HOLDER, LEAD	
56	4-039-253-01	WINDOW, ORNAMENTAL		67	4-373-263-11	SCREW (M), PT	
57	4-039-248-01	BUTTON, POWER		68	4-308-870-00	CLIP, LEAD WIRE	
58	4-329-112-00	SPRING		69	1-452-032-00	MAGNET, DISK; 10MM $\phi$	
59	$\Delta$ 8-733-231-05	PICTURE TUBE (A59JWC61X)		70	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$	
				71	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	



# SECTION 7 ELECTRICAL PARTS LIST

**F1****F2****A1**

## NOTE:

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

• Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

## RESISTORS

• All resistors are in ohms  
• F : nonflammable

When indicating parts by reference number, please include the board name.

## CAPACITORS

• MF :  $\mu$ F, PF :  $\mu$ F

## COILS

• MMH : mH, UH :  $\mu$ H

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1624-013-A	F1 BOARD, COMPLETE *****		LF662 $\Delta$ 1-424-391-11	TRANSFORMER, LINE FILTER		
	1-533-230-11	HOLDER, FUSE		LF663 $\Delta$ 1-421-862-11	LFT		
		<CONNECTOR>			<TRANSISTOR>		
	CN0003 $\Delta$ 1-580-844-11	PIN, CONNECTOR (POWER)		Q661 8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		
	CN0831 $\Delta$ 1-695-292-11	PIN, CONNECTOR (POWER)			<RESISTOR>		
		<FUSE>		R663 $\Delta$ 1-244-945-91	CARBON 1M 5% 1/2W		
	F651 $\Delta$ 1-576-232-21	FUSE (H.B.C.) 5A/250V		R664 $\Delta$ 1-205-949-11	WIREWOUND 1.8 5% 10W		
		<SWITCH>		R665 $\Delta$ 1-218-265-91	METAL GLAZE 8.2M 5% 1W		
	S651 $\Delta$ 1-571-433-12	SWITCH, PUSH (AC POWER)		R666 1-249-405-11	CARBON 100 5% 1/4W F		
		*****		R667 1-249-430-11	CARBON 12K 5% 1/4W		
	*A-1624-014-A	F2 BOARD, COMPLETE *****		R668 1-249-434-11	CARBON 27K 5% 1/4W		
		<CAPACITOR>		R669 $\Delta$ 1-205-949-11	WIREWOUND 1.8 5% 10W		
	C661 $\Delta$ 1-136-519-11	FILM 0.47MF 20% 300V		R671 1-249-415-11	CARBON 680 5% 1/4W F		
	C662 $\Delta$ 1-136-518-11	FILM 0.33MF 20% 300V			<RELAY>		
	C664 $\Delta$ 1-164-246-61	CERAMIC 0.0022MF 20% 400V		RY661 $\Delta$ 1-515-720-31	RELAY		
	C666 1-124-120-11	ELECT 220MF 20% 25V			<THERMISTOR>		
	C667 1-124-916-11	ELECT 22MF 20% 50V		THP661 $\Delta$ 1-809-827-11	THERMISTOR, POSITIVE		
	C672 $\Delta$ 1-161-964-91	CERAMIC 0.0047MF 250V			*****		
	C673 $\Delta$ 1-161-964-91	CERAMIC 0.0047MF 250V		*A-1630-130-A	A1 BOARD, COMPLETE (KV-B2512U)		
	C674 1-125-318-00	ELECT (BLOCK) 220MF 20% 400V			*****		
		<CONNECTOR>		*A-1630-126-A	A1 BOARD, COMPLETE (KV-B2513E)		
	CN0005*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			*****		
	CN0007*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			<FILTER>		
	CN0924*1-568-878-51	PIN, CONNECTOR 3P		BP1101 1-236-238-11	FILTER, BAND PASS (KV-B2512U)		
	CN0925*1-695-294-11	PIN, CONNECTOR (PC BOARD) 6P			1-239-047-11	FILTER, BAND PASS (KV-B2513E)	
	CN0929*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P		CF1101 1-409-333-00	TRAP, CERAMIC (6.0MHZ) (KV-B2512U)		
	CN0931 $\Delta$ 1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P		CF1102 1-404-134-00	TRAP, CERAMIC (5.5MHZ) (KV-B2513E)		
		<DIODE>			<CAPACITOR>		
	D661 8-719-911-19	DIODE 1SS119		C1101 1-126-101-11	ELECT 100MF 20% 16V		
	D662 8-719-400-18	DIODE MA152WK		C1102 1-126-101-11	ELECT 100MF 20% 16V		
	D663 8-719-510-63	DIODE D4S860L-F		C1103 1-163-038-00	CERAMIC CHIP 0.1MF 25V		
	D664 8-719-921-69	DIODE MTZJ-9.1		C1104 1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V		
		<TRANSFORMER>		C1105 1-163-081-00	CERAMIC CHIP 0.22MF 25V		
	LF661 $\Delta$ 1-424-391-11	TRANSFORMER, LINE FILTER		C1106 1-163-187-00	CERAMIC CHIP 180PF 5% 50V		
				C1107 1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V		
				C1108 1-163-059-00	CERAMIC CHIP 0.01MF 50V		
				C1109 1-163-033-00	CERAMIC CHIP 0.022MF 50V		
				C1110 1-164-336-11	CERAMIC CHIP 0.33MF 25V		



# A1

REF. NO.	PART NO.	DESCRIPTION			REMARK	REF. NO.	PART NO.	DESCRIPTION			REMARK
C1111	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V		FB1102	1-410-396-41	FERRITE BEAD INDUCTOR			
C1112	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V		FB1103	1-410-396-41	FERRITE BEAD INDUCTOR			
C1113	1-124-477-11	ELECT 47MF	20%	16V		FB1104	1-410-396-41	FERRITE BEAD INDUCTOR			
C1114	1-163-038-00	CERAMIC CHIP 0.1MF		25V		FB1105	1-410-396-41	FERRITE BEAD INDUCTOR			
C1115	1-124-477-11	ELECT 47MF	20%	16V		FB1107	1-410-396-41	FERRITE BEAD INDUCTOR			
C1116	1-106-228-00	MYLAR 0.22MF	10%	100V							
C1117	1-163-081-00	CERAMIC CHIP 0.22MF		25V							
C1118	1-163-113-00	CERAMIC CHIP 68PF	5%	50V							
C1119	1-163-193-00	CERAMIC CHIP 330PF	5%	50V							
C1120	1-163-193-00	CERAMIC CHIP 330PF	5%	50V		IC1101	8-759-511-88	IC TDA8732			
						IC1102	8-759-073-17	IC SAA7282P			
C1121	1-163-113-00	CERAMIC CHIP 68PF	5%	50V							
C1122	1-163-081-00	CERAMIC CHIP 0.22MF		25V							
C1123	1-106-228-00	MYLAR 0.22MF	10%	100V							
C1124	1-124-477-11	ELECT 47MF	20%	16V							
C1125	1-124-477-11	ELECT 47MF	20%	16V							
C1126	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V		L1101	1-408-405-00	INDUCTOR 4.7UH			
C1127	1-163-038-00	CERAMIC CHIP 0.1MF		25V		L1102	1-408-405-00	INDUCTOR 4.7UH			
C1128	1-124-477-11	ELECT 47MF	20%	16V		L1103	1-410-119-11	INDUCTOR 1MMH			
C1129	1-163-038-00	CERAMIC CHIP 0.1MF		25V		L1104	1-410-119-11	INDUCTOR 1MMH			
C1130	1-163-205-00	CERAMIC CHIP 0.001MF	10%	50V		L1105	1-408-411-00	INDUCTOR 15UH (KV-B2512U)			
C1131	1-163-059-00	CERAMIC CHIP 0.01MF		50V							
C1132	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1133	1-124-907-11	ELECT 10MF	20%	50V							
C1134	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V							
C1135	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1136	1-163-117-00	CERAMIC CHIP 100PF	5%	50V							
C1137	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1138	1-163-105-00	CERAMIC CHIP 33PF	5%	50V							
C1139	1-163-105-00	CERAMIC CHIP 33PF	5%	50V							
C1140	1-163-181-00	CERAMIC CHIP 100PF	5%	50V							
C1141	1-163-205-00	CERAMIC CHIP 0.001MF	5%	50V							
C1142	1-163-019-00	CERAMIC CHIP 0.0068MF		50V							
C1143	1-163-003-11	CERAMIC CHIP 330PF	10%	50V							
C1144	1-163-121-00	CERAMIC CHIP 150PF	5%	50V							
C1145	1-163-121-00	CERAMIC CHIP 150PF	5%	50V							
C1146	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1147	1-124-477-11	ELECT 47MF	20%	16V							
C1148	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V							
C1149	1-124-477-11	ELECT 47MF	20%	16V							
C1150	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1151	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1152	1-124-477-11	ELECT 47MF	20%	16V							
C1153	1-163-087-00	CERAMIC CHIP 4PF	0.25PF	50V							
C1154	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1155	1-124-477-11	ELECT 47MF	20%	16V							
C1156	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V							
C1157	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V							
C1158	1-163-038-00	CERAMIC CHIP 0.1MF		25V							
C1159	1-163-243-11	CERAMIC CHIP 47PF	5%	50V	(KV-B2512U)						



A1

A

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R1128	1-216-089-00	METAL GLAZE 47K 5%	1/10W	C201	1-130-489-00	FILM 0.033MF 5%	50V
R1129	1-216-089-00	METAL GLAZE 47K 5%	1/10W	C202	1-130-489-00	FILM 0.033MF 5%	50V
R1130	1-216-246-00	METAL GLAZE 100K 5%	1/8W	C203	1-164-005-11	CERAMIC CHIP 0.47MF	25V
R1131	1-216-218-00	METAL GLAZE 6.8K 5%	1/8W	C204	1-164-005-11	CERAMIC CHIP 0.47MF	25V
R1132	1-216-097-00	METAL GLAZE 100K 5%	1/10W	C205	1-124-907-11	ELECT 10MF 20%	50V
R1133	1-216-089-00	METAL GLAZE 47K 5%	1/10W	C206	1-164-161-11	CERAMIC CHIP 0.0022MF 10%	50V
R1134	1-216-212-00	METAL GLAZE 3.9K 5%	1/8W	C207	1-137-613-11	FILM 0.0018MF 2%	100V
R1135	1-216-081-00	METAL GLAZE 22K 5%	1/10W	C208	1-164-005-11	CERAMIC CHIP 0.47MF	25V
R1136	1-216-081-00	METAL GLAZE 22K 5%	1/10W	C209	1-164-005-11	CERAMIC CHIP 0.47MF	25V
R1137	1-216-095-00	METAL GLAZE 82K 5%	1/10W	C210	1-164-005-11	CERAMIC CHIP 0.47MF	25V
R1138	1-216-097-00	METAL GLAZE 100K 5%	1/10W	C213	1-163-023-00	CERAMIC CHIP 0.015MF 10%	50V
R1139	1-216-005-00	METAL GLAZE 15 5%	1/10W	C214	1-163-023-00	CERAMIC CHIP 0.015MF 10%	50V
R1140	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W	C215	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
R1141	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W	C216	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
R1142	1-216-033-00	METAL GLAZE 220 5%	1/10W	C217	1-124-925-11	ELECT 2.2MF 20%	50V
R1143	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C218	1-124-925-11	ELECT 2.2MF 20%	50V
R1144	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C219	1-163-011-11	CERAMIC CHIP 0.0015MF 10%	50V
R1145	1-216-001-00	METAL GLAZE 10 5%	1/10W	C220	1-163-011-11	CERAMIC CHIP 0.0015MF 10%	50V
R1146	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C221	1-124-925-11	ELECT 2.2MF 20%	50V
R1147	1-216-045-00	METAL GLAZE 680 5%	1/10W	C222	1-124-925-11	ELECT 2.2MF 20%	50V
R1148	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C223	1-136-177-00	FILM 1MF 5%	50V
R1149	1-216-001-00	METAL GLAZE 10 5%	1/10W	C224	1-136-177-00	FILM 1MF 5%	50V
R1150	1-216-045-00	METAL GLAZE 680 5%	1/10W	C225	1-164-182-11	CERAMIC CHIP 0.0033MF 10%	50V
R1151	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C226	1-163-007-11	CERAMIC CHIP 680PF 10%	50V
R1152	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C227	1-124-907-11	ELECT 10MF 20%	50V
R1153	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C228	1-124-907-11	ELECT 10MF 20%	50V
R1154	1-216-041-00	METAL GLAZE 470 5%	1/10W	C229	1-124-478-11	ELECT 100MF 20%	25V
				C230	1-124-478-11	ELECT 100MF 20%	25V
				C231	1-164-346-11	CERAMIC CHIP 1MF	16V
				C232	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
<CRYSTAL>				C233	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
X1101	1-579-689-21	VIBRATOR, CRYSTAL		C234	1-164-161-11	CERAMIC CHIP 0.0022MF 10%	50V
X1102	1-579-283-11	VIBRATOR, CRYSTAL (KV-B2512U)		C235	1-130-772-00	FILM 0.22MF 5%	63V
	1-579-282-21	VIBRATOR, CRYSTAL (KV-B2513E)		C236	1-124-618-11	ELECT 2200MF 20%	35V
*****				C237	1-124-618-11	ELECT 2200MF 20%	35V
*A-1632-106-A	A BOARD, COMPLETE			C238	1-164-161-11	CERAMIC CHIP 0.0022MF 10%	50V
	*****			C239	1-130-772-00	FILM 0.22MF 5%	63V
	(KV-B2511A, B2511D, B2511K)			C240	1-124-916-11	ELECT 22MF 20%	50V
*A-1632-113-A	A BOARD, COMPLETE (KV-B2511B)			C241	1-124-916-11	ELECT 22MF 20%	50V
	*****			C242	1-124-903-11	ELECT 1MF 20%	50V
*A-1632-117-A	A BOARD, COMPLETE (KV-B2512U)			C244	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V
	*****			C248	1-163-185-00	CERAMIC CHIP 150PF 5%	50V
*A-1632-114-A	A BOARD, COMPLETE (KV-B2513E)			C249	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
	*****			C251	1-126-320-11	ELECT 10MF 20%	16V
4-200-001-11	HOLDER, IC			C301	1-163-038-00	CERAMIC CHIP 0.1MF	25V
4-201-023-11	SPACER, INSULATING			C302	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C303	1-164-337-11	CERAMIC CHIP 2.2MF	16V
<CAPACITOR>				C304	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C071	1-124-126-00	ELECT 47MF 20%	10V	C305	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C072	1-124-120-11	ELECT 220MF 20%	16V	C306	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C074	1-163-001-11	CERAMIC CHIP 220PF 10%	50V	C307	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
C102	1-126-103-11	ELECT 470MF 20%	16V	C308	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C103	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C309	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C104	1-124-910-11	ELECT 47MF 20%	50V	C310	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C105	1-124-916-11	ELECT 22MF 20%	50V	C311	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C106	1-124-927-11	ELECT 4.7MF 20%	50V	C312	1-124-910-11	ELECT 47MF 20%	50V
		(KV-B2511A, B2511D, B2511K, B2512U, B2513E)		C313	1-163-077-00	CERAMIC CHIP 0.1MF	50V
	1-124-907-11	ELECT 10MF 20%	50V	C314	1-163-038-00	CERAMIC CHIP 0.1MF	25V
		(KV-B2511B)		C315	1-124-910-11	ELECT 47MF 20%	50V
C110	1-124-478-11	ELECT 100MF 20%	25V	C316	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C111	1-102-074-00	CERAMIC 0.001MF 10%	50V	C317	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
		(KV-B2511B)		C318	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C120	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C319	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C320	1-124-910-11	ELECT 47MF 20%	50V



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C321	1-163-038-00	CERAMIC CHIP 0.1MF	25V	<CONNECTOR>			
C322	1-124-916-11	ELECT 22MF	20%	CN0001*1-568-880-51	PIN, CONNECTOR 5P		
C323	1-163-135-00	CERAMIC CHIP 560PF	5%	CN0101 1-695-297-11	CONNECTOR, BOARD TO BOARD 20P		
C324	1-124-910-11	ELECT 47MF	20%		(KV-B2512U,B2513E)		
C325	1-163-111-00	CERAMIC CHIP 56PF	5%	CN0103*1-564-511-71	PLUG, CONNECTOR 8P		
C326	1-163-109-00	CERAMIC CHIP 47PF	5%	CN0104*1-568-882-51	PIN, CONNECTOR 7P		
C341	1-163-077-00	CERAMIC CHIP 0.1MF	10%	CN0105*1-568-880-51	PIN, CONNECTOR 5P		
C342	1-163-077-00	CERAMIC CHIP 0.1MF	10%	CN0107*1-568-879-51	PIN, CONNECTOR 4P		
C343	1-164-004-11	CERAMIC CHIP 0.1MF	10%	CN0108*1-568-878-51	PIN, CONNECTOR 3P		
C344	1-162-638-11	CERAMIC CHIP 1MF	16V	CN0109 1-695-299-11	CONNECTOR, BOARD TO BOARD 50P		
C345	1-164-346-11	CERAMIC CHIP 1MF	16V	CN0110*1-568-882-51	PIN, CONNECTOR 7P		
C347	1-162-638-11	CERAMIC CHIP 1MF	16V	CN0113 1-695-298-11	CONNECTOR, BOARD TO BOARD 40P		
C348	1-164-346-11	CERAMIC CHIP 1MF	16V	CN0137*1-564-511-51	PLUG, CONNECTOR 8P		
C349	1-164-346-11	CERAMIC CHIP 1MF	16V	CN5108*1-564-513-11	PLUG, CONNECTOR 10P		
C350	1-124-907-11	ELECT 10MF	20%				
C351	1-124-916-11	ELECT 22MF	20%	<DIODE>			
C353	1-164-346-11	CERAMIC CHIP 1MF	16V	D068	8-719-104-34	DIODE 1S2836	
C354	1-164-346-11	CERAMIC CHIP 1MF	16V	D069	8-719-104-34	DIODE 1S2836	
C355	1-162-638-11	CERAMIC CHIP 1MF	16V	D071	8-719-109-89	DIODE RD5.6ES-B2	
C356	1-164-489-11	CERAMIC CHIP 0.22MF	10%	D073	8-719-109-89	DIODE RD5.6ES-B2	
C357	1-164-299-11	CERAMIC CHIP 0.22MF	10%	D075	8-719-400-18	DIODE MA152WK	
C358	1-164-299-11	CERAMIC CHIP 0.22MF	10%	D077	8-719-400-18	DIODE MA152WK	
C359	1-124-907-11	ELECT 10MF	20%	D078	8-719-109-89	DIODE RD5.6ES-B2	
C361	1-163-101-00	CERAMIC CHIP 22PF	5%	D079	8-719-109-89	DIODE RD5.6ES-B2	
C362	1-130-772-00	FILM 0.22MF	5%	D101	8-719-982-27	DIODE MTZJ-33C	
C363	1-124-907-11	ELECT 10MF	20%	D206	8-719-400-18	DIODE MA152WK	
C365	1-124-120-11	ELECT 220MF	20%	D207	8-719-921-89	DIODE MTZJ-13C	
C366	1-124-903-11	ELECT 1MF	20%	D208	8-719-911-19	DIODE 1SS119	
C401	1-164-005-11	CERAMIC CHIP 0.47MF	16V	D209	8-719-911-19	DIODE 1SS119	
C402	1-124-917-11	ELECT 33MF	20%	D210	8-719-911-19	DIODE 1SS119	
C403	1-162-637-11	CERAMIC CHIP 0.47MF	16V	D211	8-719-911-19	DIODE 1SS119	
C411	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D212	8-719-911-19	DIODE 1SS119	
C412	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D213	8-719-400-18	DIODE MA152WK	
C421	1-124-910-11	ELECT 47MF	20%	D301	8-719-400-18	DIODE MA152WK	
C422	1-124-910-11	ELECT 47MF	20%	D302	8-719-104-34	DIODE 1S2836	
C423	1-101-004-00	CERAMIC 0.01MF	50V	D304	8-719-109-89	DIODE RD5.6ES-B2	
C424	1-163-129-00	CERAMIC CHIP 330PF	5%	D306	8-719-400-18	DIODE MA152WK	
C425	1-163-129-00	CERAMIC CHIP 330PF	5%	D307	8-719-400-18	DIODE MA152WK	
C426	1-124-910-11	ELECT 47MF	20%	D308	8-719-800-76	DIODE 1SS226	
C427	1-164-346-11	CERAMIC CHIP 1MF	16V	D381	8-719-110-03	DIODE RD7.5ES-B2	
C428	1-164-346-11	CERAMIC CHIP 1MF	16V	D401	8-719-921-69	DIODE MTZJ-9.1	
C429	1-124-119-00	ELECT 330MF	20%	D403	8-719-921-69	DIODE MTZJ-9.1	
C574	1-163-117-00	CERAMIC CHIP 100PF	5%	D405	8-719-921-69	DIODE MTZJ-9.1	
C581	1-163-031-11	CERAMIC CHIP 0.01MF	50V	D406	8-719-921-69	DIODE MTZJ-9.1	
C582	1-124-916-11	ELECT 22MF	20%	D407	8-719-921-69	DIODE MTZJ-9.1	
C583	1-163-129-00	CERAMIC CHIP 330PF	5%	D571	8-719-800-76	DIODE 1SS226	
C586	1-163-063-00	CERAMIC CHIP 0.022MF	10%	D682	8-719-109-89	DIODE RD5.6ES-B2	
C587	1-124-903-11	ELECT 1MF	20%				
C588	1-164-346-11	CERAMIC CHIP 1MF	16V	<IC>			
C589	1-126-103-11	ELECT 470MF	20%	IC072	8-759-073-14	IC X24C16P	
C590	1-124-916-11	ELECT 22MF	20%	IC201	8-759-073-30	IC TDA6612	
C591	1-124-925-11	ELECT 2.2MF	20%		8-759-073-31	IC TDA6622 (KV-B2511A,B2511B,B2511D,B2511K,B2513E)	
C592	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	IC202	8-759-502-21	IC TDA2822M	
C593	1-164-182-11	CERAMIC CHIP 0.0033MF	10%				
C595	1-163-109-00	CERAMIC CHIP 47PF	5%	IC251	8-759-072-99	IC TDA2052	
C599	1-164-232-11	CERAMIC CHIP 0.01MF	10%	IC261	8-759-072-99	IC TDA2052	
C681	1-124-478-11	ELECT 100MF	20%	IC301	8-759-073-15	IC TDA9145/N1	
C682	1-126-101-11	ELECT 100MF	20%	IC302	8-759-084-91	IC TDA4661/V2	
C683	1-124-478-11	ELECT 100MF	20%				
C684	1-124-478-11	ELECT 100MF	20%				
C685	1-124-478-11	ELECT 100MF	20%				
<FILTER>							
CF581	1-577-611-11	OSCILALTOR, CERAMIC					



A

Les composants identifiés par  
une trame et une marque  $\Delta$   
sont critiques pour la sécurité.  
Ne les remplacer que par une  
pièce portant le numéro spécifié.

The components identified by  
shading and mark  $\Delta$  are critical  
for safety.  
Replace only with part number  
specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
IC304	8-752-056-54	IC CXA1587S		JR102	1-216-295-00	METAL GLAZE	0 5% 1/10W
IC401	8-752-062-86	IC CXA1545AS		JR104	1-216-295-00	METAL GLAZE	0 5% 1/10W
IC402	8-759-073-00	IC TEA2114		JR105	1-216-295-00	METAL GLAZE	0 5% 1/10W
IC681	8-759-072-98	IC TDA8138A		JR107	1-216-295-00	METAL GLAZE	0 5% 1/10W
IC683	8-759-982-10	IC RC7809FA					
IC684	8-759-982-10	IC RC7809FA		JR110	1-216-295-00	METAL GLAZE	0 5% 1/10W
<IF BLOCK>				JR111	1-216-295-00	METAL GLAZE	0 5% 1/10W
IFB101	1-466-733-11	IF BLOCK (IFH-389) (KV-B2511A, B2511D, B2511K, B2513E)		JR112	1-216-295-00	METAL GLAZE	0 5% 1/10W
	1-466-735-11	IF BLOCK (IFH-389F) (KV-B2511B)		JR113	1-216-295-00	METAL GLAZE	0 5% 1/10W
	1-466-734-11	IF BLOCK (IFH-395) (KV-B2512U)		JR114	1-216-295-00	METAL GLAZE	0 5% 1/10W
<COIL>				JR115	1-216-295-00	METAL GLAZE	0 5% 1/10W
L101	1-412-546-41	INDUCTOR 560UH		JR116	1-216-295-00	METAL GLAZE	0 5% 1/10W
L102	1-408-413-00	INDUCTOR 22UH		JR117	1-216-295-00	METAL GLAZE	0 5% 1/10W
L201	1-407-500-00	INDUCTOR 4.7MMH		JR118	1-216-295-00	METAL GLAZE	0 5% 1/10W
L307	1-408-405-00	INDUCTOR 4.7UH		JR119	1-216-295-00	METAL GLAZE	0 5% 1/10W
L308	1-408-417-00	INDUCTOR 47UH		JR120	1-216-295-00	METAL GLAZE	0 5% 1/10W
L309	1-408-409-00	INDUCTOR 10UH		JR121	1-216-295-00	METAL GLAZE	0 5% 1/10W
L310	1-410-396-41	FERRITE BEAD INDUCTOR		JR122	1-216-295-00	METAL GLAZE	0 5% 1/10W
L572	1-410-119-11	INDUCTOR 1MMH		JR123	1-216-295-00	METAL GLAZE	0 5% 1/10W
L610	1-412-539-41	INDUCTOR 150UH		JR125	1-216-295-00	METAL GLAZE	0 5% 1/10W
L611	1-412-539-41	INDUCTOR 150UH		JR127	1-216-295-00	METAL GLAZE	0 5% 1/10W
<IC LINK>				JR129	1-216-295-00	METAL GLAZE	0 5% 1/10W
PS681A	1-532-605-91	LINK, IC 0.4A		JR131	1-216-295-00	METAL GLAZE	0 5% 1/10W
<TRANSISTOR>				JR132	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q071	8-729-901-05	TRANSISTOR DTA124EK		JR133	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q101	8-729-216-22	TRANSISTOR 2SA1162-G		JR134	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q102	8-729-901-00	TRANSISTOR DTC124EK		JR136	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q103	8-729-900-53	TRANSISTOR DTC114EK		JR137	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q201	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR138	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q202	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR140	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q203	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR141	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q204	8-729-216-22	TRANSISTOR 2SA1162-G		JR142	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q205	8-729-216-22	TRANSISTOR 2SA1162-G		JR143	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q206	8-729-216-22	TRANSISTOR 2SA1162-G		JR144	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q207	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR150	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q209	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR152	1-216-295-00	METAL GLAZE	0 5% 1/10W
Q210	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR201A	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q303	8-729-216-22	TRANSISTOR 2SA1162-G		JR202	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q304	8-729-900-53	TRANSISTOR DTC114EK		JR203	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q306	8-729-216-22	TRANSISTOR 2SA1162-G		JR204	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q311	8-729-901-06	TRANSISTOR DTA144EK		JR205	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q312	8-729-900-53	TRANSISTOR DTC114EK		JR206	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q313	8-729-216-22	TRANSISTOR 2SA1162-G		JR207	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q401	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR208	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q402	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR209	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q403	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR210	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q581	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		JR211	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q582	8-729-216-22	TRANSISTOR 2SA1162-G		JR212	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q610	8-729-140-97	TRANSISTOR 2SB734-34		JR213	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q611	8-729-900-53	TRANSISTOR DTC114EK		JR214	1-216-296-00	METAL GLAZE	0 5% 1/8W
Q683	8-729-140-96	TRANSISTOR 2SD774-34		JR215	1-216-296-00	METAL GLAZE	0 5% 1/8W
<RESISTOR>				JR216	1-216-296-00	METAL GLAZE	0 5% 1/8W
JR101	1-216-295-00	METAL GLAZE	0 5% 1/10W	JR217	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR218	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR219	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR220	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR221	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR222	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR223	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR225	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR226	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR227	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR228	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR229	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR230	1-216-296-00	METAL GLAZE	0 5% 1/8W



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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
JR231	1-216-296-00	METAL GLAZE	0 5% 1/8W	R228	1-216-081-00	METAL GLAZE	22K 5% 1/10W
JR232	1-216-296-00	METAL GLAZE	0 5% 1/8W	R229	1-216-039-00	METAL GLAZE	390 5% 1/10W
JR233	1-216-296-00	METAL GLAZE	0 5% 1/8W	R230	1-216-246-00	METAL GLAZE	100K 5% 1/8W
JR234	1-216-296-00	METAL GLAZE	0 5% 1/8W	R231	1-216-097-00	METAL GLAZE	100K 5% 1/10W
JR235	1-216-296-00	METAL GLAZE	0 5% 1/8W	R232	1-216-081-00	METAL GLAZE	22K 5% 1/10W
JR236	1-216-296-00	METAL GLAZE	0 5% 1/8W	R233	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
JR237	1-216-296-00	METAL GLAZE	0 5% 1/8W	R234	1-216-077-00	METAL GLAZE	15K 5% 1/10W
JR238	1-216-296-00	METAL GLAZE	0 5% 1/8W	R235	1-216-073-00	METAL GLAZE	10K 5% 1/10W
JR239	1-216-296-00	METAL GLAZE	0 5% 1/8W	R236	1-216-081-00	METAL GLAZE	22K 5% 1/10W
JR240	1-216-296-00	METAL GLAZE	0 5% 1/8W	R237	1-216-025-00	METAL GLAZE	100 5% 1/10W
JR241	1-216-296-00	METAL GLAZE	0 5% 1/8W	R238	1-216-025-00	METAL GLAZE	100 5% 1/10W
JR242	1-216-296-00	METAL GLAZE	0 5% 1/8W	R239	1-216-295-00	METAL GLAZE	0 5% 1/10W
JR243	1-216-296-00	METAL GLAZE	0 5% 1/8W	R241	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
JR245	1-216-296-00	METAL GLAZE	0 5% 1/8W	R242	1-216-214-00	METAL GLAZE	4.7K 5% 1/8W
JR247	1-216-296-00	METAL GLAZE	0 5% 1/8W	R244	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
JR248	1-216-296-00	METAL GLAZE	0 5% 1/8W	R245	1-216-089-00	METAL GLAZE	47K 5% 1/10W
JR250	1-216-296-00	METAL GLAZE	0 5% 1/8W	R246	1-216-097-00	METAL GLAZE	100K 5% 1/10W
JR251	1-216-296-00	METAL GLAZE	0 5% 1/8W	R247	1-216-073-00	METAL GLAZE	10K 5% 1/10W
JR252	1-216-296-00	METAL GLAZE	0 5% 1/8W	R248	1-216-073-00	METAL GLAZE	10K 5% 1/10W
JR253	1-216-296-00	METAL GLAZE	0 5% 1/8W	R249	1-216-045-00	METAL GLAZE	680 5% 1/10W
JR254	1-216-296-00	METAL GLAZE	0 5% 1/8W	R250	1-216-095-00	METAL GLAZE	82K 5% 1/10W
JR255	1-216-295-00	METAL GLAZE	0 5% 1/10W	R251	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
JR256	1-216-296-00	METAL GLAZE	0 5% 1/8W	R252	1-216-073-00	METAL GLAZE	10K 5% 1/10W
JR257	1-216-295-00	METAL GLAZE	0 5% 1/10W	R253	1-216-073-00	METAL GLAZE	10K 5% 1/10W
JR258	1-216-296-00	METAL GLAZE	0 5% 1/8W	R254	1-216-252-00	METAL GLAZE	180K 5% 1/8W
JR270	1-216-295-00	METAL GLAZE	0 5% 1/10W	R255	1-216-252-00	METAL GLAZE	180K 5% 1/8W
JR272	1-216-295-00	METAL GLAZE	0 5% 1/10W	R256	1-249-409-11	CARBON	220 5% 1/4W
R071	1-216-041-00	METAL GLAZE	470 5% 1/10W	R257	1-249-409-11	CARBON	220 5% 1/4W
R072	1-216-033-00	METAL GLAZE	220 5% 1/10W	R258	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R073	1-216-033-00	METAL GLAZE	220 5% 1/10W	R259	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R074	1-216-198-00	METAL GLAZE	1K 5% 1/8W	R260	1-216-212-00	METAL GLAZE	3.9K 5% 1/8W
R076	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R301	1-216-041-00	METAL GLAZE	470 5% 1/10W
R077	1-216-025-00	METAL GLAZE	100 5% 1/10W	R302	1-216-041-00	METAL GLAZE	470 5% 1/10W
R101	1-216-025-00	METAL GLAZE	100 5% 1/10W	R303	1-216-174-00	METAL GLAZE	100 5% 1/8W
R102	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R304	1-216-174-00	METAL GLAZE	100 5% 1/8W
R103	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R305	1-216-035-00	METAL GLAZE	270 5% 1/10W
R105	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R306	1-216-035-00	METAL GLAZE	270 5% 1/10W
R108	1-216-230-00	METAL GLAZE	22K 5% 1/8W	R307	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R115	1-216-210-00	METAL GLAZE	3.3K 5% 1/8W	R308	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R201	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W	R309	1-216-001-00	METAL GLAZE	10 5% 1/10W
R202	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W	R310	1-216-001-00	METAL GLAZE	10 5% 1/10W
R203	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R311	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R204	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R312	1-249-413-11	CARBON	470 5% 1/4W
R205	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R314	1-249-409-11	CARBON	220 5% 1/4W
R206	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R315	1-249-409-11	CARBON	220 5% 1/4W
R207	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R316	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R208	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R318	1-216-041-00	METAL GLAZE	470 5% 1/10W
R209	1-249-377-11	CARBON	0.47 5% 1/4W F	R319	1-249-413-11	CARBON	470 5% 1/4W
R210	1-247-734-11	CARBON	39 5% 1/2W	R322	1-216-041-00	METAL GLAZE	470 5% 1/10W
R211	1-247-734-11	CARBON	39 5% 1/2W	R331	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R212	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R333	1-216-182-00	METAL GLAZE	220 5% 1/8W
R213	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R334	1-216-182-00	METAL GLAZE	220 5% 1/8W
R214	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R336	1-216-178-00	METAL GLAZE	150 5% 1/8W
R215	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R337	1-216-041-00	METAL GLAZE	470 5% 1/10W
R216	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R338	1-216-037-00	METAL GLAZE	330 5% 1/10W
R217	1-216-045-00	METAL GLAZE	680 5% 1/10W	R339	1-216-025-00	METAL GLAZE	100 5% 1/10W
R218	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R340	1-216-025-00	METAL GLAZE	100 5% 1/10W
R221	1-212-849-00	FUSIBLE	4.7 5% 1/4W F	R341	1-216-025-00	METAL GLAZE	100 5% 1/10W
R222	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R342	1-216-033-00	METAL GLAZE	220 5% 1/10W
R223	1-216-045-00	METAL GLAZE	680 5% 1/10W	R343	1-216-022-00	METAL GLAZE	75 5% 1/10W
R224	1-249-433-11	CARBON	22K 5% 1/4W	R344	1-216-022-00	METAL GLAZE	75 5% 1/10W
R225	1-212-849-00	FUSIBLE	4.7 5% 1/4W F	R345	1-216-171-00	METAL GLAZE	75 5% 1/8W
R226	1-249-412-11	CARBON	390 5% 1/4W	R346	1-216-022-00	METAL GLAZE	75 5% 1/10W
R227	1-216-081-00	METAL GLAZE	22K 5% 1/10W				



**A IF (KV-B2511A/B2511D)  
B2511K/B2513E)**

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R347	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R684	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R351	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R685	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R352	1-216-033-00	METAL GLAZE	220 5% 1/10W			<TUNER>	
R354	1-216-033-00	METAL GLAZE	220 5% 1/10W	TU101	1-693-185-11	TUNER (UV916H)	
R355	1-216-033-00	METAL GLAZE	220 5% 1/10W			(KV-B2511A, B2511B, B2511D, B2511K, B2513E)	
R356	1-216-033-00	METAL GLAZE	220 5% 1/10W		1-693-184-11	TUNER (U944C) (KV-B2512U)	
R357	1-216-041-00	METAL GLAZE	470 5% 1/10W			<CRYSTAL>	
R358	1-216-031-00	METAL GLAZE	180 5% 1/10W	X301	1-567-504-11	OSCILLATOR, CRYSTAL	
R359	1-216-033-00	METAL GLAZE	220 5% 1/10W	X302	1-567-505-11	OSCILLATOR, CRYSTAL	
R360	1-216-033-00	METAL GLAZE	220 5% 1/10W			*****	
R361	1-216-033-00	METAL GLAZE	220 5% 1/10W		1-466-733-11	IF BLOCK (IFH-389)	
R362	1-216-077-00	METAL GLAZE	15K 5% 1/10W			*****	
R367	1-216-212-00	METAL GLAZE	3.9K 5% 1/8W			(KV-B2511A, B2511D, B2511K, B2513E)	
R373	1-216-017-00	METAL GLAZE	47 5% 1/10W			<CAPACITOR>	
R376	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	C101	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
R377	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	C102	1-164-222-11	CERAMIC CHIP 0.22MF	25V
R378	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C103	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R379	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W	C104	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R380	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C105	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R381	1-216-164-00	METAL GLAZE	39 5% 1/8W	C106	1-124-477-11	ELECT 47MF	20% 16V
R382	1-216-164-00	METAL GLAZE	39 5% 1/8W	C107	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R383	1-216-164-00	METAL GLAZE	39 5% 1/8W	C108	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R401	1-216-171-00	METAL GLAZE	75 5% 1/8W	C109	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R402	1-216-158-00	METAL GLAZE	22 5% 1/8W	C112	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R403	1-216-025-00	METAL GLAZE	100 5% 1/10W	C113	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
R404	1-216-158-00	METAL GLAZE	22 5% 1/8W	C114	1-124-477-11	ELECT 47MF	20% 16V
R405	1-216-025-00	METAL GLAZE	100 5% 1/10W	C115	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R406	1-216-158-00	METAL GLAZE	22 5% 1/8W	C116	1-164-346-11	CERAMIC CHIP 1MF	16V
R407	1-216-025-00	METAL GLAZE	100 5% 1/10W	C118	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R408	1-216-093-00	METAL GLAZE	68K 5% 1/10W	C119	1-163-369-11	CERAMIC CHIP 47PF	5% 50V
R410	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	C121	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
R411	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	C122	1-163-239-11	CERAMIC CHIP 33PF	5% 50V
R412	1-216-022-00	METAL GLAZE	75 5% 1/10W	C123	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
R413	1-216-022-00	METAL GLAZE	75 5% 1/10W	C124	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R414	1-216-022-00	METAL GLAZE	75 5% 1/10W	C130	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R416	1-216-113-00	METAL GLAZE	470K 5% 1/10W	C131	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
R417	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	C133	1-124-477-11	ELECT 47MF	20% 16V
R419	1-216-113-00	METAL GLAZE	470K 5% 1/10W	C152	1-164-337-11	CERAMIC CHIP 2.2MF	16V
R420	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	C153	1-164-337-11	CERAMIC CHIP 2.2MF	16V
R424	1-216-025-00	METAL GLAZE	100 5% 1/10W	C154	1-164-337-11	CERAMIC CHIP 2.2MF	16V
R425	1-216-025-00	METAL GLAZE	100 5% 1/10W	C155	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R428	1-249-393-11	CARBON	10 5% 1/4W F	C156	1-124-477-11	ELECT 47MF	20% 16V
R574	1-216-041-00	METAL GLAZE	470 5% 1/10W	C161	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
R575	1-216-037-00	METAL GLAZE	330 5% 1/10W	C162	1-164-222-11	CERAMIC CHIP 0.22MF	25V
R581	1-216-033-00	METAL GLAZE	220 5% 1/10W	C163	1-164-346-11	CERAMIC CHIP 1MF	16V
R582	1-216-037-00	METAL GLAZE	330 5% 1/10W	C164	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
R583	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	C165	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R584	1-216-039-00	METAL GLAZE	390 5% 1/10W	C166	1-124-477-11	ELECT 47MF	20% 16V
R586	1-216-047-00	METAL GLAZE	820 5% 1/10W	C167	1-163-213-00	CERAMIC CHIP 0.0022MF	5% 50V
R587	1-216-045-00	METAL GLAZE	680 5% 1/10W	C168	1-164-346-11	CERAMIC CHIP 1MF	16V
R588	1-216-101-00	METAL GLAZE	150K 5% 1/10W	C170	1-124-477-11	ELECT 47MF	20% 16V
R589	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C171	1-124-477-11	ELECT 47MF	20% 16V
R590	1-216-049-00	METAL GLAZE	1K 5% 1/10W	C172	1-124-477-11	ELECT 47MF	20% 16V
R591	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C173	1-124-477-11	ELECT 47MF	20% 16V
R592	1-216-232-00	METAL GLAZE	27K 5% 1/8W				
R593	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W				
R594	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W				
R595	1-216-643-11	METAL CHIP	470 0.50% 1/10W				
R596	1-216-670-11	METAL CHIP	6.2K 0.50% 1/10W				
R597	1-216-230-00	METAL GLAZE	22K 5% 1/8W				
R600	1-216-190-00	METAL GLAZE	470 5% 1/8W				
R616	1-216-035-00	METAL GLAZE	270 5% 1/10W				
R628	1-249-413-11	CARBON	470 5% 1/4W				
R681	1-216-397-11	METAL OXIDE	4.7 5% 3W F				



**IF** (KV-B2511A/B2511D)  
B2511K/B2513E)

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<FILTER>				JR24	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CF2	1-527-839-00	FILTER, CERAMIC		JR25	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CF3	1-527-840-00	FILTER, CERAMIC		JR29	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CF4	1-567-570-11	FILTER, CERAMIC		JR30	1-216-295-00	METAL GLAZE 0 5% 1/10W	
SWF1	1-579-658-11	FILTER, SAWTOOTH WAVE		JR33	1-216-295-00	METAL GLAZE 0 5% 1/10W	
				JR38	1-216-296-00	METAL GLAZE 0 5% 1/8W	
<CONNECTOR>				JR39	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CN1	1-750-173-11	PIN, CONNECTOR (PC BOARD) 10P		JR40	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CN2	1-750-173-11	PIN, CONNECTOR (PC BOARD) 10P		R101	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
				R102	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R103	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
<TRIMMER>				R104	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
CT1	1-404-801-11	TRAP, CERAMIC		R106	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
				R107	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
				R108	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
				R110	1-216-041-00	METAL GLAZE 470 5% 1/10W	
<DIODE>				R113	1-216-031-00	METAL GLAZE 180 5% 1/10W	
D161	8-719-400-18	DIODE MA152WK		R114	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
				R115	1-216-027-00	METAL GLAZE 120 5% 1/10W	
				R116	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
				R117	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
<IC>				R118	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
IC1	8-759-070-76	IC M52308SP		R119	1-216-240-00	METAL GLAZE 56K 5% 1/8W	
IC2	8-759-070-71	IC TDA9820		R120	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
IC3	8-759-514-54	IC BA7046		R121	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
				R122	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
<COIL>				R123	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
L101	1-408-421-00	INDUCTOR 100UH		R124	1-216-041-00	METAL GLAZE 470 5% 1/10W	
L102	1-408-419-00	INDUCTOR 68UH		R125	1-216-041-00	METAL GLAZE 470 5% 1/10W	
L103	1-408-419-00	INDUCTOR 68UH		R127	1-216-047-00	METAL GLAZE 820 5% 1/10W	
L104	1-408-408-00	INDUCTOR 8.2UH		R130	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
L121	1-408-413-00	INDUCTOR 22UH		R131	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L122	1-408-420-00	INDUCTOR 82UH		R132	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
L142	1-410-790-41	INDUCTOR 0.56UH		R133	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
L151	1-408-419-00	INDUCTOR 68UH		R134	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
L161	1-408-419-00	INDUCTOR 68UH		R135	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
<TRANSISTOR>				R150	1-216-043-00	METAL GLAZE 560 5% 1/10W	
Q101	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R151	1-216-043-00	METAL GLAZE 560 5% 1/10W	
Q102	8-729-216-22	TRANSISTOR 2SA1162-G		R152	1-216-043-00	METAL GLAZE 560 5% 1/10W	
Q121	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R153	1-216-025-00	METAL GLAZE 100 5% 1/10W	
Q122	8-729-216-22	TRANSISTOR 2SA1162-G		R154	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q161	8-729-216-22	TRANSISTOR 2SA1162-G		R155	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
Q170	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R156	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
Q171	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R157	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
Q172	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R159	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
Q173	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R160	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
<RESISTOR>				R161	1-218-755-11	METAL CHIP 130K 0.50% 1/10W	
JR2	1-216-295-00	METAL GLAZE 0 5% 1/10W		R162	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
JR3	1-216-296-00	METAL GLAZE 0 5% 1/8W		R163	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
JR4	1-216-295-00	METAL GLAZE 0 5% 1/10W		R164	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
JR7	1-216-295-00	METAL GLAZE 0 5% 1/10W		R165	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
JR8	1-216-295-00	METAL GLAZE 0 5% 1/10W		R166	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
JR9	1-216-296-00	METAL GLAZE 0 5% 1/8W		R167	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
JR11	1-216-296-00	METAL GLAZE 0 5% 1/8W		R168	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
JR14	1-216-296-00	METAL GLAZE 0 5% 1/8W		R169	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
JR16	1-216-295-00	METAL GLAZE 0 5% 1/10W		R170	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
JR18	1-216-295-00	METAL GLAZE 0 5% 1/10W		R171	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
JR19	1-216-296-00	METAL GLAZE 0 5% 1/8W		R172	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
JR20	1-216-296-00	METAL GLAZE 0 5% 1/8W		R173	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
JR21	1-216-296-00	METAL GLAZE 0 5% 1/8W		R174	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
JR23	1-216-296-00	METAL GLAZE 0 5% 1/8W		R175	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
				R176	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
				R177	1-216-095-00	METAL GLAZE 82K 5% 1/10W	



IF (KV-B2511A/B2511D)  
B2511K/B2513E)

IF (KV-B2511B)

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R178	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W	C101	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
R179	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	C102	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
R180	1-216-037-00	METAL GLAZE 330 5%	1/10W	C104	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
R181	1-216-037-00	METAL GLAZE 330 5%	1/10W	C105	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
<VARIABLE RESISTOR>				C106	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
RV1	1-241-121-11	RES, ADJ, CARBON 4.7K		C121	1-126-176-11	ELECT 220MF 20%	10V
<TRANSFORMER>				C122	1-163-119-00	CERAMIC CHIP 120PF 5%	50V
T4	1-416-017-21	COIL		C131	1-126-099-11	ELECT 2.2MF 20%	35V
T5	1-416-018-21	COIL		<FILTER>			
*****				CF1	1-527-839-00	FILTER, CERAMIC	
1-466-735-11	IF BLOCK (IFH-389F) (KV-B2511B)			CF2	1-567-569-11	FILTER, CERAMIC	
*****				CF3	1-527-840-00	FILTER, CERAMIC	
<CAPACITOR>				CF4	1-567-570-11	FILTER, CERAMIC	
C1	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V	SWF1	1-579-662-11	FILTER, SURFACE WAVE	
C2	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	SWF3	1-404-711-11	SAWF	
C3	1-124-903-11	ELECT 1MF 20%	50V	SWF4	1-579-660-11	FILTER, SAWTOOTH WAVE	
C4	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	<CONNECTOR>			
C5	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	CN1	1-750-173-11	PIN, CONNECTOR (PC BOARD) 10P	
C6	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V	CN2	1-750-173-11	PIN, CONNECTOR (PC BOARD) 10P	
C7	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	<TRIMMER>			
C8	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V	CT1	1-404-801-11	TRAP, CERAMIC	
C9	1-124-916-11	ELECT 22MF 20%	25V	CT2	1-409-429-11	TRAP, CERAMIC	
C10	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	CV1	1-141-245-00	CAP, TRIMMER	
C11	1-124-477-11	ELECT 47MF 20%	16V	CV2	1-141-245-00	CAP, TRIMMER	
C13	1-163-059-00	CERAMIC CHIP 0.01MF 10%	50V	CV3	1-141-304-21	TRIMMER, CERAMIC	
C14	1-124-477-11	ELECT 47MF 20%	16V	<DIODE>			
C15	1-124-903-11	ELECT 1MF 20%	50V	D7	8-719-421-57	DIODE MA73-TX	
C16	1-163-061-00	CERAMIC CHIP 0.015MF 10%	50V	D8	8-719-421-57	DIODE MA73-TX	
C17	1-162-638-11	CERAMIC CHIP 1MF 16V		D9	8-719-421-57	DIODE MA73-TX	
C18	1-162-638-11	CERAMIC CHIP 1MF 16V		<IC>			
C19	1-163-141-00	CERAMIC CHIP 0.001MF 5%	50V	IC1	8-759-070-75	IC M52312SP	
C20	1-124-902-00	ELECT 0.47MF 20%	50V	IC2	8-759-070-71	IC TDA9820	
C21	1-124-903-11	ELECT 1MF 20%	50V	IC3	8-759-979-62	IC PCF8574	
C22	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	<COIL>			
C23	1-124-902-00	ELECT 0.47MF 20%	50V	L1	1-408-419-00	INDUCTOR 68UH	
C24	1-164-506-11	CERAMIC CHIP 4.7MF 16V		L2	1-408-419-00	INDUCTOR 68UH	
C25	1-124-477-11	ELECT 47MF 20%	16V	L3	1-408-407-00	INDUCTOR 6.8UH	
C26	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	L4	1-408-419-00	INDUCTOR 68UH	
C27	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	L5	1-408-419-00	INDUCTOR 68UH	
C28	1-124-477-11	ELECT 47MF 20%	16V	L7	1-408-406-00	INDUCTOR 5.6UH	
C33	1-124-907-11	ELECT 10MF 20%	50V	L9	1-408-419-00	INDUCTOR 68UH	
C34	1-124-907-11	ELECT 10MF 20%	50V	L71	1-408-419-00	INDUCTOR 68UH	
C35	1-124-925-11	ELECT 2.2MF 20%	50V	L101	1-408-399-00	INDUCTOR 1.5UH	
C36	1-124-477-11	ELECT 47MF 20%	16V	L121	1-408-407-00	INDUCTOR 6.8UH	
C37	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	<TRANSISTOR>			
C38	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V	Q1	8-729-907-06	TRANSISTOR BF199-AMMO	
C40	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	Q4	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
C71	1-124-477-11	ELECT 47MF 20%	16V	Q5	8-729-115-10	TRANSISTOR 2SK105A-10	
C72	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V	Q6	8-729-900-52	TRANSISTOR DTC114YK	
C80	1-124-477-11	ELECT 47MF 20%	16V	Q7	8-729-216-22	TRANSISTOR 2SA1162-G	
C83	1-124-477-11	ELECT 47MF 20%	16V				
C84	1-124-477-11	ELECT 47MF 20%	16V				
C85	1-124-477-11	ELECT 47MF 20%	16V				
C86	1-124-477-11	ELECT 47MF 20%	16V				
C87	1-124-477-11	ELECT 47MF 20%	16V				
C91	1-163-229-11	CERAMIC CHIP 12PF 5%	50V				
C95	1-164-337-11	CERAMIC CHIP 2.2MF 16V					



## IF (KV-B2511B)

## IF (KV-B2512U)

REF. NO.	PART NO.	DESCRIPTION					REMARK	REF. NO.	PART NO.	DESCRIPTION					REMARK
Q8	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R74	1-216-079-00	METAL GLAZE	18K	5%	1/10W		
Q10	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R75	1-216-079-00	METAL GLAZE	18K	5%	1/10W		
Q11	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R76	1-216-025-00	METAL GLAZE	100	5%	1/10W		
Q12	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R77	1-216-174-00	METAL GLAZE	100	5%	1/8W		
Q13	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R												
Q14	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R81	1-216-095-00	METAL GLAZE	82K	5%	1/10W		
Q15	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R82	1-216-121-00	METAL GLAZE	1M	5%	1/10W		
Q16	8-729-216-22	TRANSISTOR	2SA1162-G					R83	1-216-025-00	METAL GLAZE	100	5%	1/10W		
Q101	8-729-104-80	TRANSISTOR	2SC3355					R84	1-216-085-00	METAL GLAZE	33K	5%	1/10W		
Q121	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R					R85	1-216-085-00	METAL GLAZE	33K	5%	1/10W		
<RESISTOR>								R86	1-216-689-11	METAL GLAZE	39K	5%	1/10W		
JR2	1-216-295-00	METAL GLAZE	0	5%	1/10W			R87	1-216-095-00	METAL GLAZE	82K	5%	1/10W		
JR3	1-216-296-00	METAL GLAZE	0	5%	1/8W			R88	1-216-095-00	METAL GLAZE	82K	5%	1/10W		
JR5	1-216-296-00	METAL GLAZE	0	5%	1/8W			R89	1-216-095-00	METAL GLAZE	82K	5%	1/10W		
R1	1-216-025-00	METAL GLAZE	100	5%	1/10W			R90	1-216-075-00	METAL GLAZE	12K	5%	1/10W		
R2	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W			R91	1-216-295-00	METAL GLAZE	0	5%	1/10W		
								R92	1-216-075-00	METAL GLAZE	12K	5%	1/10W		
R3	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W			R93	1-216-075-00	METAL GLAZE	12K	5%	1/10W		
R4	1-216-041-00	METAL GLAZE	470	5%	1/10W			R94	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W		
R5	1-216-021-00	METAL GLAZE	68	5%	1/10W			R95	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W		
R6	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W			R96	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W		
R8	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W			R97	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W		
								R98	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W		
R9	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W			R99	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W		
R10	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W			R100	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W		
R11	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W			R102	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W		
R24	1-216-280-00	METAL GLAZE	2.7M	5%	1/8W			R103	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W		
R25	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W			R104	1-216-049-00	METAL GLAZE	1K	5%	1/10W		
								R105	1-216-033-00	METAL GLAZE	220	5%	1/10W		
R26	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W			R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W		
R27	1-216-266-00	METAL GLAZE	680K	5%	1/8W			R122	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W		
R28	1-216-075-00	METAL GLAZE	12K	5%	1/10W			R123	1-216-041-00	METAL GLAZE	470	5%	1/10W		
R29	1-216-035-00	METAL GLAZE	270	5%	1/10W			R124	1-216-041-00	METAL GLAZE	470	5%	1/10W		
R30	1-216-049-00	METAL GLAZE	1K	5%	1/10W			R125	1-216-041-00	METAL GLAZE	470	5%	1/10W		
								R301	1-216-049-00	METAL GLAZE	1K	5%	1/10W		
R31	1-216-017-00	METAL GLAZE	47	5%	1/10W			R302	1-216-049-00	METAL GLAZE	1K	5%	1/10W		
R32	1-216-043-00	METAL GLAZE	560	5%	1/10W			R303	1-216-049-00	METAL GLAZE	1K	5%	1/10W		
R33	1-216-037-00	METAL GLAZE	330	5%	1/10W			R304	1-216-037-00	METAL GLAZE	330	5%	1/10W		
R34	1-216-252-00	METAL GLAZE	180K	5%	1/8W			R305	1-216-049-00	METAL GLAZE	1K	5%	1/10W		
R35	1-216-035-00	METAL GLAZE	270	5%	1/10W			R306	1-216-025-00	METAL GLAZE	100	5%	1/10W		
								R307	1-216-037-00	METAL GLAZE	330	5%	1/10W		
R36	1-216-029-00	METAL GLAZE	150	5%	1/10W			R308	1-216-037-00	METAL GLAZE	330	5%	1/10W		
R37	1-216-049-00	METAL GLAZE	1K	5%	1/10W										
R38	1-216-099-00	METAL GLAZE	120K	5%	1/10W										
R39	1-216-089-00	METAL GLAZE	47K	5%	1/10W										
R40	1-216-049-00	METAL GLAZE	1K	5%	1/10W										
R42	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W										
R43	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W										
R44	1-216-027-00	METAL GLAZE	120	5%	1/10W										
R45	1-216-041-00	METAL GLAZE	470	5%	1/10W										
R46	1-216-031-00	METAL GLAZE	180	5%	1/10W										
R47	1-216-075-00	METAL GLAZE	12K	5%	1/10W										
R48	1-216-081-00	METAL GLAZE	22K	5%	1/10W										
R49	1-216-049-00	METAL GLAZE	1K	5%	1/10W										
R53	1-216-082-00	METAL GLAZE	24K	5%	1/10W										
R54	1-216-043-00	METAL GLAZE	560	5%	1/10W										
R55	1-216-043-00	METAL GLAZE	560	5%	1/10W										
R56	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W										
R57	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W										
R58	1-216-041-00	METAL GLAZE	470	5%	1/10W										
R59	1-216-043-00	METAL GLAZE	560	5%	1/10W										
R60	1-216-043-00	METAL GLAZE	560	5%	1/10W										
R61	1-216-295-00	METAL GLAZE	0	5%	1/10W										
R63	1-216-043-00	METAL GLAZE	560	5%	1/10W										
R71	1-216-079-00	METAL GLAZE	18K	5%	1/10W										
R72	1-216-079-00	METAL GLAZE	18K	5%	1/10W										
R73	1-216-049-00	METAL GLAZE	1K	5%	1/10W										
														</	



## IF (KV-B2512U)

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C102	1-164-222-11	CERAMIC CHIP 0.22MF	25V	<TRANSISTOR>			
C103	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	Q101	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
C104	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	Q102	8-729-216-22	TRANSISTOR 2SA1162-G	
C105	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	Q122	8-729-216-22	TRANSISTOR 2SA1162-G	
C106	1-124-477-11	ELECT 47MF	20% 16V	Q161	8-729-216-22	TRANSISTOR 2SA1162-G	
C107	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	Q172	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
C108	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	Q173	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
C109	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	<RESISTOR>			
C112	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	JR1	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C113	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	JR2	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C114	1-124-477-11	ELECT 47MF	20% 16V	JR3	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C115	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	JR4	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C116	1-164-346-11	CERAMIC CHIP 1MF	16V	JR7	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C118	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	JR8	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C119	1-163-369-11	CERAMIC CHIP 47PF	5% 50V	JR9	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C122	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	JR10	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C130	1-216-295-00	METAL GLAZE 0 5% 1/10W		JR11	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C131	1-163-224-11	CERAMIC CHIP 7PF	0.25PF 50V	JR12	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C133	1-124-477-11	ELECT 47MF	20% 16V	JR13	1-163-093-00	CERAMIC CHIP 10PF 5% 50V	
C161	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	JR14	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C162	1-164-222-11	CERAMIC CHIP 0.22MF	25V	JR16	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C163	1-164-346-11	CERAMIC CHIP 1MF	16V	JR18	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C164	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	JR19	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C165	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	JR20	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C166	1-124-477-11	ELECT 47MF	20% 16V	JR21	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C167	1-163-213-00	CERAMIC CHIP 0.0022MF	5% 50V	JR23	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C168	1-164-346-11	CERAMIC CHIP 1MF	16V	JR24	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C170	1-124-477-11	ELECT 47MF	20% 16V	JR25	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C171	1-124-477-11	ELECT 47MF	20% 16V	JR29	1-216-296-00	METAL GLAZE 0 5% 1/8W	
<FILTER>				JR30	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CD1	1-579-657-21	DISCRIMINATOR, CERAMIC		JR33	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CF1	1-567-569-11	FILTER, CERAMIC		JR38	1-216-296-00	METAL GLAZE 0 5% 1/8W	
SWF1	1-579-659-11	FILTER, SAWTOOTH WAVE		JR39	1-216-296-00	METAL GLAZE 0 5% 1/8W	
<CONNECTOR>				JR40	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CN1	1-750-173-11	PIN, CONNECTOR (PC BOARD) 10P		JR41	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CN2	1-750-173-11	PIN, CONNECTOR (PC BOARD) 10P		JR42	1-216-295-00	METAL GLAZE 0 5% 1/10W	
<TRIMMER>				JR101	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CT1	1-409-333-00	TRAP, CERAMIC (6.0MHZ)		R101	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
<DIODE>				R102	1-216-045-00	METAL GLAZE 680 5% 1/10W	
D161	8-719-400-18	DIODE MA152WK		R103	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
<IC>				R104	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
IC1	8-759-070-76	IC M52308SP		R105	1-216-043-00	METAL GLAZE 560 5% 1/10W	
IC3	8-759-514-54	IC BA7046		R106	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
<COIL>				R107	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
L101	1-408-414-00	INDUCTOR 27UH		R108	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
L102	1-408-419-00	INDUCTOR 68UH		R110	1-216-041-00	METAL GLAZE 470 5% 1/10W	
L103	1-408-419-00	INDUCTOR 68UH		R112	1-216-045-00	METAL GLAZE 680 5% 1/10W	
L104	1-408-406-00	INDUCTOR 5.6UH		R113	1-216-031-00	METAL GLAZE 180 5% 1/10W	
L105	1-408-410-00	INDUCTOR 12UH		R114	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
L142	1-410-790-41	INDUCTOR 0.56UH		R115	1-216-031-00	METAL GLAZE 180 5% 1/10W	
L161	1-408-419-00	INDUCTOR 68UH		R116	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
				R117	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
				R118	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
				R119	1-216-240-00	METAL GLAZE 56K 5% 1/8W	
				R120	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
				R121	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
				R122	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
				R123	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
				R130	1-216-049-00	METAL GLAZE 1K 5% 1/10W	



IF (KV-B2512U)

M

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R131	1-216-025-00	METAL GLAZE 100 5% 1/10W		C511	1-106-375-12	MYLAR 0.022MF 10% 250V	
R132	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W		C512	1-126-103-11	ELECT 470MF 20% 16V	
R133	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		C513	1-163-209-00	CERAMIC CHIP 0.0015MF 5% 50V	
R134	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C514	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
R135	1-216-198-00	METAL GLAZE 1K 5% 1/8W		C519	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
R153	1-216-025-00	METAL GLAZE 100 5% 1/10W		C522	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
R159	1-216-107-00	METAL GLAZE 270K 5% 1/10W		C523	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
R160	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C531	1-164-493-11	CERAMIC CHIP 0.047MF 10% 50V	
R161	1-218-755-11	METAL CHIP 130K 0.50% 1/10W		C532	1-164-489-11	CERAMIC CHIP 0.22MF 10% 16V	
R162	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C538	1-164-489-11	CERAMIC CHIP 0.22MF 10% 16V	
R163	1-216-113-00	METAL GLAZE 470K 5% 1/10W		C541	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R164	1-216-113-00	METAL GLAZE 470K 5% 1/10W		C542	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
R165	1-216-081-00	METAL GLAZE 22K 5% 1/10W		C543	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
R166	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C544	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
R167	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C546	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
R168	1-216-113-00	METAL GLAZE 470K 5% 1/10W		C547	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V	
R169	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C549	1-163-989-11	CERAMIC CHIP 0.033MF 10% 25V	
R175	1-216-083-00	METAL GLAZE 27K 5% 1/10W		C550	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
R176	1-216-075-00	METAL GLAZE 12K 5% 1/10W		C552	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
R177	1-216-095-00	METAL GLAZE 82K 5% 1/10W		C559	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
R178	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W		C560	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
R179	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		C562	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R181	1-216-037-00	METAL GLAZE 330 5% 1/10W		C563	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
<VARIABLE RESISTOR>				C564	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
RV1	1-241-121-11	RES, ADJ, CARBON 4.7K		C565	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
<TRANSFORMER>				C566	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
T4	1-416-017-21	COIL		C567	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
T5	1-416-018-21	COIL		C568	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
*****				C569	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
*A-1635-001-A M BOARD, COMPLETE				C570	1-162-568-11	CERAMIC CHIP 0.33MF 10% 16V	
*****				<FILTER>			
<CAPACITOR>				CD001	1-577-364-11	VIBRATOR, CERAMIC	
C001	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		<CONNECTOR>			
C003	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		CN1406*1-568-880-51	PIN, CONNECTOR 5P		
C007	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		CN1413 1-695-301-11	CONNECTOR, BOARD TO BOARD 4P		
C008	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		CN1426*1-568-881-51	PIN, CONNECTOR 6P		
C010	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		CN1432*1-568-882-51	PIN, CONNECTOR 7P		
C011	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		CN1441*1-564-511-11	PLUG, CONNECTOR 8P		
C012	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		<DIODE>			
C014	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		D001	8-719-027-82	DIODE MA3039H-TX	
C016	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V		D501	8-719-800-76	DIODE 1SS226	
C018	1-164-505-11	CERAMIC CHIP 2.2MF 16V		D503	8-719-401-31	DIODE MA3047L-TX	
C019	1-124-477-11	ELECT 47MF 20% 16V		D504	8-719-400-18	DIODE MA152WK	
C032	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		D510	8-719-105-91	DIODE RD5.6M-B2	
C035	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V		<IC>			
C036	1-164-005-11	CERAMIC CHIP 0.47MF 25V		IC001	8-759-072-93	IC SDA30C162	
C037	1-163-117-00	CERAMIC CHIP 100PF 5% 50V			*1-540-123-11	SOCKET, IC 68P; IC001	
C501	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V		IC003	8-759-160-87	IC M27C512-20B1-AE27	
C502	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V		IC501	8-759-513-48	IC TDA2595/V9	
C503	1-137-367-11	FILM 0.0033MF 5% 50V		IC561	8-752-347-92	IC CXD2018Q	
C504	1-130-831-21	MYLAR 0.56MF 10% 63V		IC562	8-759-998-98	IC LM358D	
C505	1-124-925-11	ELECT 2.2MF 20% 50V		IC563	8-759-081-30	IC MC78L05ACPRP	
C506	1-162-568-11	CERAMIC CHIP 0.33MF 10% 16V		<COIL>			
C507	1-164-489-11	CERAMIC CHIP 0.22MF 10% 16V		L001	1-408-421-00	INDUCTOR 100UH	
C508	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V					
C509	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V					
C510	1-124-925-11	ELECT 2.2MF 20% 50V					





REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
L501	1-410-119-11	INDUCTOR	1MMH	R507	1-216-097-00	METAL GLAZE	100K 5% 1/10W
L561	1-408-409-00	INDUCTOR	10UH	R509	1-216-039-00	METAL GLAZE	390 5% 1/10W
L562	1-408-409-00	INDUCTOR	10UH				
L563	1-408-947-00	INDUCTOR	2.2MMH	R510	1-216-073-00	METAL GLAZE	10K 5% 1/10W
<TRANSISTOR>				R511	1-216-097-00	METAL GLAZE	100K 5% 1/10W
Q002	8-729-216-22	TRANSISTOR	2SA1162-G	R512	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q003	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R	R513	1-216-230-00	METAL GLAZE	22K 5% 1/8W
Q501	8-729-901-01	TRANSISTOR	DTC144EK	R514	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
Q502	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R				
Q503	8-729-901-01	TRANSISTOR	DTC144EK	R515	1-216-049-00	METAL GLAZE	1K 5% 1/10W
Q508	8-729-901-01	TRANSISTOR	DTC144EK	R516	1-216-039-00	METAL GLAZE	390 5% 1/10W
Q509	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R	R517	1-216-039-00	METAL GLAZE	390 5% 1/10W
Q564	8-729-216-22	TRANSISTOR	2SA1162-G	R518	1-216-075-00	METAL GLAZE	12K 5% 1/10W
Q565	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R	R519	1-216-033-00	METAL GLAZE	220 5% 1/10W
Q566	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R				
Q567	8-729-901-01	TRANSISTOR	DTC144EK	R520	1-216-093-00	METAL GLAZE	68K 5% 1/10W
<RESISTOR>				R521	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
JR002	1-216-295-00	METAL GLAZE	0 5% 1/10W	R522	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R001	1-216-025-00	METAL GLAZE	100 5% 1/10W	R523	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R002	1-216-025-00	METAL GLAZE	100 5% 1/10W	R524	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R003	1-216-049-00	METAL GLAZE	1K 5% 1/10W				
R006	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R525	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R007	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R526	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R008	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R527	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R010	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R528	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R011	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R529	1-216-696-11	METAL CHIP	75K 0.50% 1/10W
R012	1-216-049-00	METAL GLAZE	1K 5% 1/10W				
R014	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R531	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R015	1-216-296-00	METAL GLAZE	0 5% 1/8W	R532	1-249-427-11	METAL	6.8K 5% 1/4W
R016	1-216-045-00	METAL GLAZE	680 5% 1/10W	R533	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R017	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R535	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R018	1-216-041-00	METAL GLAZE	470 5% 1/10W	R536	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R020	1-216-049-00	METAL GLAZE	1K 5% 1/10W				
R021	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R538	1-216-025-00	METAL GLAZE	100 5% 1/10W
R025	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R539	1-216-657-11	METAL CHIP	1.8K 0.50% 1/10W
R026	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R540	1-216-295-00	METAL GLAZE	0 5% 1/10W
R028	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R541	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R030	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R542	1-216-025-00	METAL GLAZE	100 5% 1/10W
R032	1-216-049-00	METAL GLAZE	1K 5% 1/10W				
R033	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R544	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R034	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R545	1-216-033-00	METAL GLAZE	220 5% 1/10W
R035	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R546	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R038	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R547	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R049	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R551	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R050	1-216-073-00	METAL GLAZE	10K 5% 1/10W				
R051	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R552	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R052	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R553	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R053	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R559	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R054	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R560	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R055	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R564	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R067	1-216-043-00	METAL GLAZE	560 5% 1/10W				
R068	1-216-043-00	METAL GLAZE	560 5% 1/10W	R565	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R069	1-216-037-00	METAL GLAZE	330 5% 1/10W	R566	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R070	1-216-037-00	METAL GLAZE	330 5% 1/10W	R567	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R501	1-216-047-00	METAL GLAZE	820 5% 1/10W	R568	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R502	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R570	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R503	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W				
R504	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	<VARIABLE RESISTOR>			
R505	1-216-075-00	METAL GLAZE	12K 5% 1/10W	RV506	1-241-766-11	RES, ADJ, CERMET	47K
R506	1-216-049-00	METAL GLAZE	1K 5% 1/10W	*****			
				*A-1638-030-A C BOARD, COMPLETE			
				*****			
				<CAPACITOR>			
				C701	1-162-114-00	CERAMIC	0.0047MF 2KV
				C703	1-123-946-00	ELECT	4.7MF 20% 250V
				C704	1-130-202-00	FILM	0.022MF 5% 400V
				C705	1-162-116-00	CERAMIC	680PF 10% 2KV
				C708	1-163-197-00	CERAMIC CHIP	470PF 10% 50V



The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

KV-B251

C

D

REF. NO.	PART NO.	DESCRIPTION	REMARK
C709	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C710	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C711	1-101-880-00	CERAMIC 47PF	5% 50V
C712	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C713	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C714	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C716	1-124-122-11	ELECT 100MF	20% 50V

<CONNECTOR>

CN0002*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CN0403*1-564-511-11	PLUG, CONNECTOR 8P
CN0421*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P

<DIODE>

D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-911-19	DIODE 1SS119
D704	8-719-911-19	DIODE 1SS119
D705	8-719-911-19	DIODE 1SS119
D706	8-719-911-19	DIODE 1SS119
D707	8-719-911-19	DIODE 1SS119
D708	8-719-911-19	DIODE 1SS119
D709	8-719-911-19	DIODE 1SS119
D710	8-719-911-19	DIODE 1SS119
D713	8-719-908-03	DIODE GP08D

<JACK>

J701 $\Delta$ 1-526-990-13	SOCKET, PICTURE TUBE
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<COIL>

L701	1-410-667-31	INDUCTOR 22UH
L703	1-408-609-41	INDUCTOR 33UH
L705	1-408-609-41	INDUCTOR 33UH
L707	1-408-609-41	INDUCTOR 33UH

<TRANSISTOR>

Q701	8-729-906-70	TRANSISTOR BF871
Q702	8-729-906-70	TRANSISTOR BF871
Q703	8-729-906-70	TRANSISTOR BF871
Q704	8-729-906-70	TRANSISTOR BF871
Q705	8-729-906-70	TRANSISTOR BF871
Q706	8-729-906-70	TRANSISTOR BF871
Q707	8-729-200-17	TRANSISTOR 2SA1091-0
Q708	8-729-200-17	TRANSISTOR 2SA1091-0
Q709	8-729-200-17	TRANSISTOR 2SA1091-0
Q710	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R
Q711	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R
Q712	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R
Q713	8-729-216-22	TRANSISTOR 2SA1162-G
Q714	8-729-255-12	TRANSISTOR 2SC2551-0

<RESISTOR>

JR701	1-216-296-00	METAL GLAZE 0	5%	1/8W
JR703	1-216-296-00	METAL GLAZE 0	5%	1/8W
R701	1-202-848-00	SOLID 680K	10%	1/2W
R702	1-202-838-00	SOLID 100K	20%	1/2W
R703	1-202-838-00	SOLID 100K	20%	1/2W
R704	1-202-842-11	SOLID 220K	10%	1/2W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R705	1-216-398-11	METAL OXIDE 5.6	5% 3W F
R706	1-216-398-11	METAL OXIDE 5.6	5% 3W F
R710	1-215-899-11	METAL OXIDE 15K	5% 2W F
R711	1-202-820-11	SOLID 1.5K	20% 1/2W
R712	1-215-899-11	METAL OXIDE 15K	5% 2W F
R713	1-202-820-11	SOLID 1.5K	20% 1/2W
R714	1-215-899-11	METAL OXIDE 15K	5% 2W F
R715	1-202-820-11	SOLID 1.5K	20% 1/2W
R716	1-247-700-11	CARBON 100	5% 1/4W F
R717	1-249-405-11	CARBON 100	5% 1/4W F
R718	1-247-700-11	CARBON 100	5% 1/4W F
R720	1-249-417-11	CARBON 1K	5% 1/4W F
R722	1-247-713-11	CARBON 1K	5% 1/4W F
R724	1-249-417-11	CARBON 1K	5% 1/4W F
R725	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R726	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R727	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R728	1-216-039-00	METAL GLAZE 390	5% 1/10W
R729	1-216-039-00	METAL GLAZE 390	5% 1/10W
R730	1-216-039-00	METAL GLAZE 390	5% 1/10W
R731	1-216-017-00	METAL GLAZE 47	5% 1/10W
R732	1-216-017-00	METAL GLAZE 47	5% 1/10W
R733	1-216-017-00	METAL GLAZE 47	5% 1/10W
R734	1-202-549-00	SOLID 100	20% 1/2W
R735	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R738	1-216-025-00	METAL GLAZE 100	5% 1/10W
R739	1-216-025-00	METAL GLAZE 100	5% 1/10W
R740	1-216-025-00	METAL GLAZE 100	5% 1/10W
R741	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R742	1-216-295-00	METAL GLAZE 0	5% 1/10W
R743	1-249-434-11	CARBON 27K	5% 1/4W
R747	1-216-488-11	METAL OXIDE 18K	5% 3W F
R749	1-215-926-00	METAL OXIDE 33K	5% 3W F
R751	1-216-489-11	METAL OXIDE 27K	5% 3W F
R753	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R755	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R756	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R757	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R758	1-249-419-11	CARBON 1.5K	5% 1/4W
R759	1-249-419-11	CARBON 1.5K	5% 1/4W
R760	1-249-419-11	CARBON 1.5K	5% 1/4W

<VARIABLE RESISTOR>

RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M
RV702	1-241-656-21	RES, ADJ, METAL FILM 110M

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\*A-1642-089-A D BOARD, COMPLETE  
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4-200-001-11 HOLDER, IC  
4-201-023-11 SPACER, INSULATING  
\*4-368-683-11 SPRING, TRANSISTOR  
\*4-389-343-11 SPRING, IC

<CAPACITOR>

C601	1-130-202-00	FILM	0.022MF	10%	400V
C603 $\Delta$	1-164-246-61	CERAMIC	0.0022MF	20%	400V
C605	1-124-910-11	ELECT	47MF	20%	50V
C608	1-124-903-11	ELECT	1MF	20%	50V
C611	1-102-002-00	CERAMIC	680PF	10%	500V
C612	1-137-437-11	FILM	0.0056MF	5%	50V




Les composants identifiés par  
une trame et une marque  $\Delta$   
sont critiques pour la sécurité.  
Ne les remplacer que par une  
pièce portant le numéro spécifié.

The components identified by  
shading and mark  $\Delta$  are critical  
for safety.  
Replace only with part number  
specified.

D

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK					
C613	1-129-722-00	FILM	0.047MF	10%	630V	C870	1-137-364-11	FILM	0.001MF	5%	50V	
C614	1-102-030-00	CERAMIC	330PF	10%	500V	C871	1-130-651-00	FILM	0.001MF	2%	100V	
C615	1-126-943-11	ELECT	2200MF	20%	25V	C872	1-124-907-11	ELECT	10MF	20%	50V	
C616	1-102-030-00	CERAMIC	330PF	10%	500V	C873	1-137-364-11	FILM	0.001MF	5%	50V	
C617	1-162-116-00	CERAMIC	680PF	10%	2KV	C875	1-102-038-00	CERAMIC	0.001MF		500V	
C618	1-162-134-11	CERAMIC	470PF	10%	2KV	C877	1-124-902-00	ELECT	0.47MF	20%	50V	
C619	1-102-030-00	CERAMIC	330PF	10%	500V	C878	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C620	1-164-299-11	CERAMIC CHIP	0.22MF	10%	25V	C879	1-102-228-00	CERAMIC	470PF	10%	500V	
C621	1-124-347-00	ELECT	100MF	20%	160V	C1501	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C622	1-128-320-11	ELECT	2200MF	20%	16V	C1502	1-124-903-11	ELECT	1MF	20%	50V	
C623	1-102-030-00	CERAMIC	330PF	10%	500V	C1503	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C624	1-126-800-51	ELECT	2200MF	20%	35V	C1504	1-124-480-11	ELECT	470MF	20%	25V	
C625	1-126-800-51	ELECT	2200MF	20%	35V	C1505	1-124-911-11	ELECT	220MF	20%	50V	
C627	1-137-365-11	FILM	0.0015MF	5%	50V	C1506	1-136-202-11	FILM	0.33MF	5%	63V	
C628	1-124-910-11	ELECT	47MF	20%	50V	C1507	1-106-228-00	MYLAR	0.22MF	10%	100V	
C629	1-124-907-11	ELECT	10MF	20%	50V	C1508	1-124-480-11	ELECT	470MF	20%	25V	
C631	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	C1509	1-124-767-00	ELECT	2.2MF	20%	50V	
C632	1-137-372-11	FILM	0.022MF	5%	50V	C1511	1-124-907-11	ELECT	10MF	20%	50V	
C633	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V	C1512	1-124-006-11	ELECT	10MF	20%	25V	
C636	1-130-777-00	FILM	0.1MF	5%	63V	C1514	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C640	1-124-916-11	ELECT	22MF	20%	50V	C1515	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C801	1-137-116-11	FILM	1MF	5%	200V	<CONNECTOR>						
C803	1-164-695-11	CERAMIC CHIP	0.0022MF	5%	50V	CN0004*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P					
C804	1-106-383-00	MYLAR	0.047MF	10%	100V	CN0009 1-568-878-51	PIN, CONNECTOR 3P					
C805	1-124-902-00	ELECT	0.47MF	20%	50V	CN0504*1-568-882-51	PIN, CONNECTOR 7P					
C806	1-124-907-11	ELECT	10MF	20%	50V	CN0505*1-568-880-51	PIN, CONNECTOR 5P					
C808	1-162-114-00	CERAMIC	0.0047MF		2KV	CN0506*1-568-880-51	PIN, CONNECTOR 5P					
C809	1-124-808-51	ELECT	10MF	20%	200V	CN0519*1-568-878-51	PIN, CONNECTOR 3P					
C810	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	CN0521*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P					
C812	1-162-318-11	CERAMIC	0.001MF	10%	500V	CN0524*1-568-878-51	PIN, CONNECTOR 3P					
C813	1-110-364-11	MYLAR	0.1MF	10%	200V	CN0525*1-695-294-11	PIN, CONNECTOR (PC BOARD) 6P					
C815	1-162-117-00	CERAMIC	100PF	10%	500V	CN0526*1-568-881-51	PIN, CONNECTOR 6P					
C819	1-126-103-11	ELECT	470MF	20%	16V	CN0529*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P					
C821	<del>1-136-897-11</del>	FILM	0.021MF	3%	2KV	CN5521*1-568-878-51	PIN, CONNECTOR 3P					
C822	<del>1-162-116-91</del>	CERAMIC	680PF	10%	2KV	DY1 *1-580-798-11	CONNECTOR PIN (DY) 6P					
C823	1-124-902-00	ELECT	0.47MF	20%	50V	<DIODE>						
C824	1-137-368-11	FILM	0.0047MF	5%	50V	D602	8-719-300-33	DIODE RU-3AM				
C825	<del>1-162-116-91</del>	CERAMIC	680PF	10%	2KV	D606	8-719-300-33	DIODE RU-3AM				
C826	<del>1-136-895-51</del>	FILM	0.068MF	5%	630V	D608	8-719-300-33	DIODE RU-3AM				
C827	1-106-383-00	MYLAR	0.047MF	10%	100V	D610	1-806-660-11	DIODE ESAB85-009				
C828	1-136-557-11	FILM	0.0033MF	10%	400V	D611	8-719-029-04	DIODE D5L60				
C831	1-123-932-00	ELECT	4.7MF	20%	160V	D612	8-719-510-09	DIODE D10SC6M				
C832	1-124-910-11	ELECT	47MF	20%	50V	D613	8-719-920-68	DIODE ESAB92-02				
C833	1-136-828-11	FILM	1.8MF	5%	200V	D614	8-719-920-68	DIODE ESAB92-02				
C834	1-137-513-11	FILM	0.62MF	5%	200V	D616	8-719-110-31	DIODE RD12ES-B2				
C835	1-124-480-11	ELECT	470MF	20%	25V	D619	8-719-400-18	DIODE MA152WK				
C836	1-102-228-00	CERAMIC	470PF	10%	500V	D620	8-719-911-19	DIODE 1SS119				
C837	1-129-702-00	FILM	0.001MF	10%	400V	D624	8-719-312-40	DIODE R2K				
C838	1-129-725-00	FILM	0.082MF	10%	250V	D801	8-719-018-82	DIODE RGP02-20EL-6394				
C839	1-123-950-00	ELECT	47MF	20%	250V	D802	8-719-300-33	DIODE RU-3AM				
C840	1-124-480-11	ELECT	470MF	20%	25V	D804	8-719-400-18	DIODE MA152WK				
C841	1-102-228-00	CERAMIC	470PF	10%	500V	D808	8-719-109-88	DIODE RD5.6ES-B1				
C842	1-104-722-91	FILM	0.068MF	10%	250V	D809	8-719-110-03	DIODE RD7.5ES-B2				
C846	1-123-024-21	ELECT	33MF		160V	D812	8-719-908-03	DIODE GP08D				
C851	1-136-559-11	MYLAR	0.0047MF	10%	400V	D813	8-719-908-03	DIODE GP08D				
C852	1-164-299-11	CERAMIC CHIP	0.22MF	10%	25V	D814	8-719-979-85	DIODE EGP20G				
C853	1-124-910-11	ELECT	47MF	20%	50V	D815	8-719-300-33	DIODE RU-3AM				
C854	<del>1-162-115-91</del>	CERAMIC	330PF	10%	2KV	D816	8-719-979-85	DIODE EGP20G				
C857	1-124-902-00	ELECT	0.47MF	20%	50V	D818	8-719-109-93	DIODE RD6.2ES-B2				
C861	1-130-777-00	FILM	0.1MF	5%	63V	D821	8-719-400-18	DIODE MA152WK				
C863	1-106-383-00	MYLAR	0.047MF	10%	100V							
C866	1-129-702-00	FILM	0.001MF	10%	400V							
C868	1-137-371-11	FILM	0.015MF	5%	50V							
C869	1-136-165-00	FILM	0.1MF	5%	50V							



Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

D

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**D H1**

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R638	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R894	1-216-264-00	METAL GLAZE	560K 5% 1/8W
R639	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R895	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R640	1-207-905-00	WIREWOUND	0.27 10% 2W F	R897	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R645	1-215-464-00	METAL	62K 1% 1/4W	R898	1-216-262-00	METAL GLAZE	470K 5% 1/8W
R646	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1501	1-216-673-11	METAL CHIP	8.2K 0.50% 1/10W
R647	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R1502	1-216-665-11	METAL CHIP	3.9K 0.50% 1/10W
R651	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R1503	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R801	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R1504	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R802	1-216-295-00	METAL GLAZE	0 5% 1/10W	R1505	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R804	1-217-778-11	FUSIBLE	1K 5% 1W F	R1506	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R805	1-216-677-11	METAL CHIP	12K 0.50% 1/10W	R1508	1-216-684-11	METAL CHIP	24K 0.50% 1/10W
R806	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R1509	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R807	1-216-037-00	METAL GLAZE	330 5% 1/10W	R1510	1-249-382-11	CARBON	1.2 5% 1/4W F
R808	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1511	1-215-887-00	METAL OXIDE	150 5% 2W F
R809	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1512	1-216-371-00	METAL OXIDE	1.5 5% 2W F
R811	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1514	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R812	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R1551	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R813	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	<VARIABLE RESISTOR>			
R814	1-216-091-00	METAL GLAZE	56K 5% 1/10W	RV601	1-241-628-11	RES, ADJ, CARBON 2.2K	
R815	1-216-081-00	METAL GLAZE	22K 5% 1/10W	<TRANSFORMER>			
R819	1-247-755-11	CARBON	1.8K 5% 1/2W F	T601	1-450-997-11	S.R.T (SMT7)	
R820	1-216-097-00	METAL GLAZE	100K 5% 1/10W	T801	1-453-118-11	TRANSFORMER ASSY, FLYBACK (UX-2600A2)	
R821	1-215-918-00	METAL OXIDE	1.5K 5% 3W F	T803	1-437-090-00	HDT	
R822	1-215-918-00	METAL OXIDE	1.5K 5% 3W F	*****			
R823	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	*1-643-004-11	H1 BOARD	*****	
R824	1-216-675-11	METAL CHIP	10K 0.50% 1/10W	<CAPACITOR>			
R825	1-216-345-11	METAL OXIDE	0.47 5% 1W F	C083	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
R826	1-216-166-00	METAL GLAZE	47 5% 1/8W	C087	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
R828	1-216-121-00	METAL GLAZE	1M 5% 1/10W	<CONNECTOR>			
R829	1-249-429-11	CARBON	10K 5% 1/4W F	CN1008*1-564-516-11	PLUG, CONNECTOR 13P		
R830	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	<JACK>			
R832	1-216-089-00	METAL GLAZE	47K 5% 1/10W	J81	1-568-678-11	TERMINAL BLOCK, S 3P	
R833	1-216-105-00	METAL GLAZE	220K 5% 1/10W	J82	1-562-837-11	JACK	
R834	1-216-109-00	METAL GLAZE	330K 5% 1/10W	<COIL>			
R835	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	L081	1-408-409-00	INDUCTOR	10UH
R836	1-216-242-00	METAL GLAZE	68K 5% 1/8W	L082	1-408-409-00	INDUCTOR	10UH
R837	1-216-695-11	METAL CHIP	68K 0.50% 1/10W	<RESISTOR>			
R838	1-216-091-00	METAL GLAZE	56K 5% 1/10W	JR021	1-216-295-00	METAL GLAZE	0 5% 1/10W
R839	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R081	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R841	1-249-397-11	CARBON	22 5% 1/4W F	R082	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R842	1-215-890-11	METAL OXIDE	470 5% 2W F	R083	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R846	1-216-671-11	METAL CHIP	6.8K 0.50% 1/10W	R084	1-216-202-00	METAL GLAZE	1.5K 5% 1/8W
R847	1-216-699-11	METAL CHIP	100K 0.50% 1/10W	R085	1-216-202-00	METAL GLAZE	1.5K 5% 1/8W
R849	1-215-908-00	METAL OXIDE	33 5% 3W F				
R851	1-247-743-11	CARBON	220 5% 1/2W F				
R852	1-249-389-11	CARBON	4.7 5% 1/4W F				
R853	1-249-443-11	CARBON	0.47 5% 1/4W F				
R854	1-249-443-11	CARBON	0.47 5% 1/4W F				
R855	1-202-818-00	SOLID	1K 10% 1/2W				
R858	1-249-425-11	CARBON	4.7K 5% 1/4W				
R864	1-216-686-11	METAL CHIP	30K 0.50% 1/10W				
R865	1-215-493-00	METAL	1M 1% 1/4W				
R866	1-216-687-11	METAL CHIP	33K 0.50% 1/10W				
R867	1-216-113-00	METAL GLAZE	470K 5% 1/10W				
R868	1-249-435-11	CARBON	33K 5% 1/4W				
R871	1-249-493-11	CARBON	56K 5% 1/2W				
R872	1-249-393-11	CARBON	10 5% 1/4W F				
R873	1-249-393-11	CARBON	10 5% 1/4W F				
R876	1-249-421-11	CARBON	2.2K 5% 1/4W F				
R877	1-215-880-00	METAL OXIDE	10 5% 2W F				
R878	1-215-883-11	METAL OXIDE	33 5% 2W F				
R884	1-216-693-11	METAL CHIP	56K 0.50% 1/10W				
R889	1-216-089-00	METAL GLAZE	47K 5% 1/10W				
R893	1-215-878-00	METAL OXIDE	33K 5% 1W F				



H1

H2

J

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<SWITCH>				<DIODE>			
S081	1-571-532-21	SWITCH, TACTIL		D903	8-719-921-69	DIODE MTZJ-9.1	
S082	1-571-532-21	SWITCH, TACTIL		D904	8-719-921-69	DIODE MTZJ-9.1	
S083	1-571-532-21	SWITCH, TACTIL		D907	8-719-921-69	DIODE MTZJ-9.1	
*****				D908	8-719-921-69	DIODE MTZJ-9.1	
*****				D909	8-719-921-69	DIODE MTZJ-9.1	
*1-642-997-11	H2 BOARD	*****		D910	8-719-921-69	DIODE MTZJ-9.1	
*4-201-076-01	HOLDER, LED			D911	8-719-921-69	DIODE MTZJ-9.1	
*4-374-987-01	GUIDE, LIGHT			D912	8-719-921-69	DIODE MTZJ-9.1	
4-381-686-01	BRACKET (B), LIGHT GUIDE			D913	8-719-921-69	DIODE MTZJ-9.1	
<CONNECTOR>				D914	8-719-921-69	DIODE MTZJ-9.1	
CN1132*1-568-882-51	PIN, CONNECTOR 7P			D915	8-719-921-69	DIODE MTZJ-9.1	
<DIODE>				D916	8-719-921-69	DIODE MTZJ-9.1	
D092	8-719-948-31	DIODE LD-201VR		D917	8-719-921-69	DIODE MTZJ-9.1	
D093	8-719-948-31	DIODE LD-201VR		D924	8-719-921-69	DIODE MTZJ-9.1	
D094	8-719-948-31	DIODE LD-201VR		D925	8-719-921-69	DIODE MTZJ-9.1	
<IC>				D926	8-719-921-69	DIODE MTZJ-9.1	
IC091	8-741-101-75	IC SBX1610-11		D927	8-719-921-69	DIODE MTZJ-9.1	
*****				D928	8-719-921-69	DIODE MTZJ-9.1	
*****				<JACK>			
*A-1651-040-A	J BOARD, COMPLETE	*****		J903	1-561-534-41	SOCKET, PIN 21P	
<CAPACITOR>				J905	1-695-293-11	SOCKET 21P	
C281	1-126-103-11	ELECT 470MF	20% 16V	<COIL>			
C293	1-101-003-00	CERAMIC 0.0047MF	50V	L281	1-402-711-11	INDUCTOR, WIDEBAND	
C294	1-101-003-00	CERAMIC 0.0047MF	50V	L282	1-402-711-11	INDUCTOR, WIDEBAND	
C295	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	L283	1-402-711-11	INDUCTOR, WIDEBAND	
C296	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	<TRANSISTOR>			
C906	1-101-004-00	CERAMIC 0.01MF	50V	Q281	8-729-901-81	TRANSISTOR 2SC2412K-T-146-F	
C910	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	Q282	8-729-901-81	TRANSISTOR 2SC2412K-T-146-F	
C911	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	<RESISTOR>			
C912	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	JR901	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C913	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	JR906	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C914	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	JR915	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C915	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	JR917	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C916	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	JR918	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C917	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	JR919	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C922	1-124-477-11	ELECT 47MF	20% 16V	JR920	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C923	1-164-346-11	CERAMIC CHIP 1MF	16V	JR921	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C924	1-124-477-11	ELECT 47MF	20% 16V	JR924	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C925	1-124-477-11	ELECT 47MF	20% 16V	JR926	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C926	1-164-346-11	CERAMIC CHIP 1MF	16V	JR927	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C927	1-124-477-11	ELECT 47MF	20% 16V	JR928	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C928	1-124-477-11	ELECT 47MF	20% 16V	JR935	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C929	1-124-477-11	ELECT 47MF	20% 16V	JR940	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C930	1-124-477-11	ELECT 47MF	20% 16V	JR942	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C931	1-164-346-11	CERAMIC CHIP 1MF	16V	JR952	1-216-296-00	METAL GLAZE 0 5% 1/8W	
C932	1-164-346-11	CERAMIC CHIP 1MF	16V	JR954	1-216-295-00	METAL GLAZE 0 5% 1/10W	
<CONNECTOR>				JR955	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CN1209	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P		JR956	1-216-295-00	METAL GLAZE 0 5% 1/10W	
CN1233*1-564-518-11	PLUG, CONNECTOR 3P			JR957	1-216-295-00	METAL GLAZE 0 5% 1/10W	
				R282	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R283	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R284	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R287	1-216-216-00	METAL GLAZE 5.6K 5% 1/8W	
				R288	1-216-216-00	METAL GLAZE 5.6K 5% 1/8W	
				R289	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	





REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R290	1-216-216-00	METAL GLAZE	5.6K 5%	1/8W	*A-1645-024-A	V BOARD, COMPLETE	
R291	1-249-413-11	CARBON	470 5%	1/4W		*****	
R292	1-249-413-11	CARBON	470 5%	1/4W			
R907	1-216-029-00	METAL GLAZE	150 5%	1/10W			
R908	1-216-029-00	METAL GLAZE	150 5%	1/10W		<CAPACITOR>	
R911	1-216-022-00	METAL GLAZE	75 5%	1/10W	C01	1-124-916-11	ELECT 22MF 20% 50V
R913	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C02	1-163-038-00	CERAMIC CHIP 0.1MF 25V
R914	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C03	1-163-038-00	CERAMIC CHIP 0.1MF 25V
R919	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C04	1-124-916-11	ELECT 22MF 20% 50V
R920	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C05	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V
R921	1-216-022-00	METAL GLAZE	75 5%	1/10W	C06	1-124-120-11	ELECT 220MF 20% 16V
R922	1-216-222-00	METAL GLAZE	10K 5%	1/8W	C07	1-124-903-11	ELECT 1MF 20% 50V
R923	1-216-039-00	METAL GLAZE	390 5%	1/10W	C08	1-163-097-00	CERAMIC CHIP 15PF 5% 50V
R924	1-216-039-00	METAL GLAZE	390 5%	1/10W	C09	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V
R925	1-216-089-00	METAL GLAZE	47K 5%	1/10W	C10	1-163-133-00	CERAMIC CHIP 470PF 5% 50V
R926	1-216-039-00	METAL GLAZE	390 5%	1/10W	C11	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V
R927	1-216-039-00	METAL GLAZE	390 5%	1/10W	C12	1-163-127-00	CERAMIC CHIP 270PF 5% 50V
R928	1-216-089-00	METAL GLAZE	47K 5%	1/10W	C13	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
R929	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C14	1-163-097-00	CERAMIC CHIP 15PF 5% 50V
R930	1-216-113-00	METAL GLAZE	470K 5%	1/10W	C15	1-163-103-00	CERAMIC CHIP 27PF 5% 50V
R931	1-216-212-00	METAL GLAZE	3.9K 5%	1/8W	C16	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V
R932	1-216-113-00	METAL GLAZE	470K 5%	1/10W	C17	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
R933	1-216-073-00	METAL GLAZE	10K 5%	1/10W	C18	1-163-093-00	CERAMIC CHIP 10PF 5% 50V
R934	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C19	1-163-089-00	CERAMIC CHIP 6PF 0.25PF 50V
R935	1-216-022-00	METAL GLAZE	75 5%	1/10W	C20	1-163-125-00	CERAMIC CHIP 220PF 5% 50V
R936	1-216-022-00	METAL GLAZE	75 5%	1/10W	C21	1-163-833-00	CERAMIC CHIP 0.068MF 25V
R937	1-216-113-00	METAL GLAZE	470K 5%	1/10W	C22	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
R938	1-216-039-00	METAL GLAZE	390 5%	1/10W	C23	1-163-210-00	CERAMIC CHIP 0.0016MF 5% 50V
R939	1-216-188-00	METAL GLAZE	390 5%	1/8W	C24	1-164-505-11	CERAMIC CHIP 2.2MF 16V
R940	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C25	1-164-505-11	CERAMIC CHIP 2.2MF 16V
R941	1-216-113-00	METAL GLAZE	470K 5%	1/10W	C26	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
R942	1-216-188-00	METAL GLAZE	390 5%	1/8W	C28	1-163-137-00	CERAMIC CHIP 680PF 5% 50V
R943	1-216-089-00	METAL GLAZE	47K 5%	1/10W	C30	1-136-171-00	FILM 0.33MF 5% 50V
R944	1-216-188-00	METAL GLAZE	390 5%	1/8W	C32	1-163-038-00	CERAMIC CHIP 0.1MF 25V
R945	1-216-089-00	METAL GLAZE	47K 5%	1/10W	C33	1-124-910-11	ELECT 47MF 20% 50V
R947	1-216-029-00	METAL GLAZE	150 5%	1/10W	C34	1-124-907-11	ELECT 10MF 20% 50V
R950	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C35	1-163-243-11	CERAMIC CHIP 47PF 5% 50V
R951	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	C36	1-163-239-11	CERAMIC CHIP 33PF 5% 50V
R959	1-216-071-00	METAL GLAZE	8.2K 5%	1/10W	C37	1-216-295-00	METAL GLAZE 0 5% 1/10W
R960	1-216-071-00	METAL GLAZE	8.2K 5%	1/10W	C39	1-163-135-00	CERAMIC CHIP 560PF 5% 50V
R965	1-216-029-00	METAL GLAZE	150 5%	1/10W	C40	1-163-263-11	CERAMIC CHIP 330PF 5% 50V
R966	1-216-029-00	METAL GLAZE	150 5%	1/10W	C53	1-163-038-00	CERAMIC CHIP 0.1MF 25V
R967	1-216-029-00	METAL GLAZE	150 5%	1/10W	C54	1-163-038-00	CERAMIC CHIP 0.1MF 25V
R968	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			
R969	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			
R970	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W		<CONNECTOR>	
R971	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	CN1737*1-564-511-11	PLUG, CONNECTOR 8P	
R972	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W	CN1741*1-564-511-11	PLUG, CONNECTOR 8P	
R973	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			
R974	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			
R975	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			
R976	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			
R977	1-216-063-00	METAL GLAZE	3.9K 5%	1/10W			

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V

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<TRIMMER>				R10	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
CT01	1-141-418-11	CAP. ADJ		R11	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
<DIODE>				R12	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
D01	8-719-400-18	DIODE MA152WK		R13	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
D03	8-719-104-34	DIODE 1S2836		R15	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
D04	8-719-104-34	DIODE 1S2836		R16	1-216-033-00	METAL GLAZE 220 5%	1/10W
D09	8-719-400-18	DIODE MA152WK		R17	1-216-033-00	METAL GLAZE 220 5%	1/10W
D10	8-719-400-18	DIODE MA152WK		R20	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D11	8-719-400-18	DIODE MA152WK		R21	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D12	8-719-400-18	DIODE MA152WK		R22	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
<IC>				R23	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
IC01	8-759-166-41	IC SDA5248-2C1		R24	1-216-091-00	METAL GLAZE 56K 5%	1/10W
IC02	8-759-037-64	IC SDA5231-2		R25	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
IC03	8-759-035-39	IC MCM514256AP80		R26	1-216-081-00	METAL GLAZE 22K 5%	1/10W
IC04	8-752-353-39	IC CXD1050A-15P		R27	1-216-043-00	METAL GLAZE 560 5%	1/10W
IC05	8-759-987-16	IC LM393P		R28	1-216-043-00	METAL GLAZE 560 5%	1/10W
<COIL>				R29	1-216-043-00	METAL GLAZE 560 5%	1/10W
L01	1-408-411-00	INDUCTOR 15UH		R30	1-216-037-00	METAL GLAZE 330 5%	1/10W
L02	1-408-414-00	INDUCTOR 27UH		R31	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
L03	1-408-417-00	INDUCTOR 47UH		R32	1-216-073-00	METAL GLAZE 10K 5%	1/10W
L04	1-408-413-00	INDUCTOR 22UH		R33	1-216-017-00	METAL GLAZE 47 5%	1/10W
L05	1-408-409-00	INDUCTOR 10UH		R34	1-216-081-00	METAL GLAZE 22K 5%	1/10W
<TRANSISTOR>				R35	1-216-081-00	METAL GLAZE 22K 5%	1/10W
Q01	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R36	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q03	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R37	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q04	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R38	1-218-773-11	METAL CHIP 750K 0.50%	1/10W
Q06	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R39	1-218-758-11	METAL CHIP 180K 0.50%	1/10W
Q07	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R40	1-216-043-00	METAL GLAZE 560 5%	1/10W
Q08	8-729-216-22	TRANSISTOR 2SA1622-G		R41	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q09	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R42	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q10	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R43	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q11	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R44	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q12	8-729-901-00	TRANSISTOR DTC124EK		R46	1-216-073-00	METAL GLAZE 10K 5%	1/10W
<RESISTOR>				R47	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
JR02	1-216-295-00	METAL GLAZE 0 5%	1/10W	R48	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R01	1-216-025-00	METAL GLAZE 100 5%	1/10W	R49	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R02	1-216-025-00	METAL GLAZE 100 5%	1/10W	R50	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R03	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W	R54	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R04	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R55	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R05	1-216-041-00	METAL GLAZE 470 5%	1/10W	R56	1-216-667-11	METAL CHIP 4.7K 0.50%	1/10W
R06	1-216-029-00	METAL GLAZE 150 5%	1/10W	<CRYSTAL>			
R07	1-216-041-00	METAL GLAZE 470 5%	1/10W	X02	1-567-495-11	OSCILLATOR, CRYSTAL	
R08	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W	*****			
R09	1-216-091-00	METAL GLAZE 56K 5%	1/10W	MISCELLANEOUS			
				*****			
				$\Delta$ 1-402-746-21 COIL, DEGAUSSING			
				$\Delta$ 1-451-311-21 DEFLECTION YOKE (Y25FXA)			
				1-452-032-00 MAGNET, DISK; 10MM $\phi$			
				1-452-094-00 MAGNET, ROTATABLE DISK; 15MM $\phi$			
				0-550-040-01 SPEAKER			



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REF.NO.	PART NO.	DESCRIPTION	REMARK
	 1-690-296-11	CORD, POWER (WITH NOISE FILTER) (KV-B2511A, B2511B, B2511D, B2511K, B2513E)	
	 1-590-762-11	CORD, POWER (WITH PLUG) (KV-B2512U)	
V901	 8-733-231-05	PICTURE TUBE (A59JWC61X)	

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ACCESSORIES AND PACKING MATERIALS  
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4-202-183-41	MANUAL, INSTRUCTION (KV-B2511A)
4-202-183-81	MANUAL, INSTRUCTION (KV-B2511B)
4-202-183-11	MANUAL, INSTRUCTION (KV-B2511D)
4-202-183-91	MANUAL, INSTRUCTION (KV-B2511K)
4-202-183-61	MANUAL, INSTRUCTION (KV-B2512U)
4-202-183-71	MANUAL, INSTRUCTION (KV-B2513E)
4-202-255-81	MANUAL, INSTRUCTION (KV-B2513E)
*4-039-171-01	INDIVIDUAL CARTON
*4-039-172-01	CUSHION (UPPER) (ASSY)
*4-039-173-01	CUSHION (LOWER) (ASSY)
*4-396-065-01	BAG, PROTECTION

REMOTE COMMANDER

1-693-176-11	REMOTE COMMANDER (RM-830)
9-903-466-01	POCKET COVER (FOR RM-830)